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THE DOCTRINE OF NECESSITY EXAMINED.

IN *The Monist* for January, 1891, I endeavored to show what elementary ideas ought to enter into our view of the universe. I may mention that on those considerations I had already grounded a cosmical theory, and from it had deduced a considerable number of consequences capable of being compared with experience. This comparison is now in progress, but under existing circumstances must occupy many years.

I propose here to examine the common belief that every single fact in the universe is precisely determined by law. It must not be supposed that this is a doctrine accepted everywhere and at all times by all rational men. Its first advocate appears to have been Democritus the atomist, who was led to it, as we are informed, by reflecting upon the "impenetrability, translation, and impact of matter (*ἀντιτυπία καὶ φορὰ καὶ πληγὴ τῆς ὕλης*)." That is to say, having restricted his attention to a field where no influence other than mechanical constraint could possibly come before his notice, he straightway jumped to the conclusion that throughout the universe that was the sole principle of action,—a style of reasoning so usual in our day with men not unreflecting as to be more than excusable in the infancy of thought. But Epicurus, in revising the atomic doctrine and repairing its defences, found himself obliged to suppose that atoms swerve from their courses by spontaneous chance; and thereby he conferred upon the theory life and entelechy.

For we now see clearly that the peculiar function of the molecular hypothesis in physics is to open an entry for the calculus of probabilities. Already, the prince of philosophers had repeatedly and emphatically condemned the dictum of Democritus (especially in the "Physics," Book II, chapters iv, v, vi), holding that events come to pass in three ways, namely, (1) by external compulsion, or the action of efficient causes, (2) by virtue of an inward nature, or the influence of final causes, and (3) irregularly without definite cause, but just by absolute chance; and this doctrine is of the inmost essence of Aristotelianism. It affords, at any rate, a valuable enumeration of the possible ways in which anything can be supposed to have come about. The freedom of the will, too, was admitted both by Aristotle and by Epicurus. But the Stoa, which in every department seized upon the most tangible, hard, and lifeless element, and blindly denied the existence of every other, which, for example, impugned the validity of the inductive method and wished to fill its place with the *reductio ad absurdum*, very naturally became the one school of ancient philosophy to stand by a strict necessitarianism, thus returning to the single principle of Democritus that Epicurus had been unable to swallow. Necessitarianism and materialism with the Stoics went hand in hand, as by affinity they should. At the revival of learning, Stoicism met with considerable favor, partly because it departed just enough from Aristotle to give it the spice of novelty, and partly because its superficialities well adapted it for acceptance by students of literature and art who wanted their philosophy drawn mild. Afterwards, the great discoveries in mechanics inspired the hope that mechanical principles might suffice to explain the universe; and though without logical justification, this hope has since been continually stimulated by subsequent advances in physics. Nevertheless, the doctrine was in too evident conflict with the freedom of the will and with miracles to be generally acceptable, at first. But meantime there arose that most widely spread of philosophical blunders, the notion that associationalism belongs intrinsically to the materialistic family of doctrines; and thus was evolved the theory of motives; and libertarianism became weakened. At present, historical criticism has almost exploded the miracles, great

and small; so that the doctrine of necessity has never been in so great vogue as now.

The proposition in question is that the state of things existing at any time, together with certain immutable laws, completely determine the state of things at every other time (for a limitation to *future* time is indefensible). Thus, given the state of the universe in the original nebula, and given the laws of mechanics, a sufficiently powerful mind could deduce from these data the precise form of every curlicue of every letter I am now writing.

Whoever holds that every act of the will as well as every idea of the mind is under the rigid governance of a necessity co-ordinated with that of the physical world, will logically be carried to the proposition that minds are part of the physical world in such a sense that the laws of mechanics determine everything that happens according to immutable attractions and repulsions. In that case, that instantaneous state of things from which every other state of things is calculable consists in the positions and velocities of all the particles at any instant. This, the usual and most logical form of necessitarianism, is called the mechanical philosophy.

When I have asked thinking men what reason they had to believe that every fact in the universe is precisely determined by law, the first answer has usually been that the proposition is a "presupposition" or postulate of scientific reasoning. Well, if that is the best that can be said for it, the belief is doomed. Suppose it be "postulated": that does not make it true, nor so much as afford the slightest rational motive for yielding it any credence. It is as if a man should come to borrow money, and when asked for his security, should reply he "postulated" the loan. To "postulate" a proposition is no more than to hope it is true. There are, indeed, practical emergencies in which we act upon assumptions of certain propositions as true, because if they are not so, it can make no difference how we act. But all such propositions I take to be hypotheses of individual facts. For it is manifest that no universal principle can in its universality be compromised in a special case or can be requisite for the validity of any ordinary inference. To say, for instance, that the demonstration by Archimedes of the property of

the lever would fall to the ground if men were endowed with free-will, is extravagant; yet this is implied by those who make a proposition incompatible with the freedom of the will the postulate of all inference. Considering, too, that the conclusions of science make no pretence to being more than probable, and considering that a probable inference can at most only suppose something to be most frequently, or otherwise approximately, true, but never that anything is precisely true without exception throughout the universe, we see how far this proposition in truth is from being so postulated.

But the whole notion of a postulate being involved in reasoning appertains to a by-gone and false conception of logic. Non-deductive, or ampliative inference is of three kinds: induction, hypothesis, and analogy. If there be any other modes, they must be extremely unusual and highly complicated, and may be assumed with little doubt to be of the same nature as those enumerated. For induction, hypothesis, and analogy, as far as their ampliative character goes, that is, so far as they conclude something not implied in the premises, depend upon one principle and involve the same procedure. All are essentially inferences from sampling. Suppose a ship arrives in Liverpool laden with wheat in bulk. Suppose that by some machinery the whole cargo be stirred up with great thoroughness. Suppose that twenty-seven thimblefuls be taken equally from the forward, midships, and aft parts, from the starboard, centre, and larboard parts, and from the top, half depth, and lower parts of her hold, and that these being mixed and the grains counted, four fifths of the latter are found to be of quality *A*. Then we infer, experientially and provisionally, that approximately four fifths of all the grain in the cargo is of the same quality. I say we infer this *experientially* and *provisionally*. By saying that we infer it *experientially*, I mean that our conclusion makes no pretension to knowledge of wheat-in-itself, our ἀλήθεια, as the derivation of that word implies, has nothing to do with *latent* wheat. We are dealing only with the matter of possible experience,—experience in the full acceptation of the term as something not merely affecting the senses but also as the subject of thought. If there be any wheat hidden on the ship, so that it can neither turn up in the sample nor be heard

of subsequently from purchasers,—or if it be half-hidden, so that it may, indeed, turn up, but is less likely to do so than the rest,—or if it can affect our senses and our pockets, but from some strange cause or causelessness cannot be reasoned about,—all such wheat is to be excluded (or have only its proportional weight) in calculating that true proportion of quality *A*, to which our inference seeks to approximate. By saying that we draw the inference *provisionally*, I mean that we do not hold that we have reached any assigned degree of approximation as yet, but only hold that if our experience be indefinitely extended, and if every fact of whatever nature, as fast as it presents itself, be duly applied, according to the inductive method, in correcting the inferred ratio, then our approximation will become indefinitely close in the long run; that is to say, close to the experience *to come* (not merely close by the exhaustion of a finite collection) so that if experience in general is to fluctuate irregularly to and fro, in a manner to deprive the ratio sought of all definite value, we shall be able to find out approximately within what limits it fluctuates, and if, after having one definite value, it changes and assumes another, we shall be able to find that out, and in short, whatever may be the variations of this ratio in experience, experience indefinitely extended will enable us to detect them, so as to predict rightly, at last, what its ultimate value may be, if it have any ultimate value, or what the ultimate law of succession of values may be, if there be any such ultimate law, or that it ultimately fluctuates irregularly within certain limits, if it do so ultimately fluctuate. Now our inference, claiming to be no more than thus experiential and provisional, manifestly involves no postulate whatever.

For what is a postulate? It is the formulation of a material fact which we are not entitled to assume as a premise, but the truth of which is requisite to the validity of an inference. Any fact, then, which might be supposed postulated, must either be such that it would ultimately present itself in experience, or not. If it will present itself, we need not postulate it now in our provisional inference, since we shall ultimately be entitled to use it as a premise. But if it never would present itself in experience, our conclusion is valid but for the possibility of this fact being otherwise than assumed, that is,

it is valid as far as possible experience goes, and that is all that we claim. Thus, every postulate is cut off, either by the provisionality or by the experientiality of our inference. For instance, it has been said that induction postulates that, if an indefinite succession of samples be drawn, examined, and thrown back each before the next is drawn, then in the long run every grain will be drawn as often as any other, that is to say postulates that the ratio of the numbers of times in which any two are drawn will indefinitely approximate to unity. But no such postulate is made; for if, on the one hand, we are to have no other experience of the wheat than from such drawings, it is the ratio that presents itself in those drawings and not the ratio which belongs to the wheat in its latent existence that we are endeavoring to determine; while if, on the other hand, there is some other mode by which the wheat is to come under our knowledge, equivalent to another kind of sampling, so that after all our care in stirring up the wheat, some experiential grains will present themselves in the first sampling operation more often than others in the long run, this very singular fact will be sure to get discovered by the inductive method, which must avail itself of every sort of experience; and our inference, which was only provisional, corrects itself at last. Again, it has been said, that induction postulates that under like circumstances like events will happen, and that this postulate is at bottom the same as the principle of universal causation. But this is a blunder, or *bévue*, due to thinking exclusively of inductions where the concluded ratio is either 1 or 0. If any such proposition were postulated, it would be that under like circumstances (the circumstances of drawing the different samples) different events occur in the same proportions in all the different sets,—a proposition which is false and even absurd. But in truth no such thing is postulated, the experiential character of the inference reducing the condition of validity to this, that if a certain result does not occur, the opposite result will be manifested, a condition assured by the provisionality of the inference. But it may be asked whether it is not conceivable that every instance of a certain class destined to be ever employed as a datum of induction should have one character, while every instance destined not to be so employed should have the opposite

character. The answer is that in that case, the instances excluded from being subjects of reasoning would not be experienced in the full sense of the word, but would be among these *latent* individuals of which our conclusion does not pretend to speak.

To this account of the rationale of induction I know of but one objection worth mention: it is that I thus fail to deduce the full degree of force which this mode of inference in fact possesses; that according to my view, no matter how thorough and elaborate the stirring and mixing process had been, the examination of a single handful of grain would not give me any assurance, sufficient to risk money upon, that the next handful would not greatly modify the concluded value of the ratio under inquiry, while, in fact, the assurance would be very high that this ratio was not greatly in error. If the true ratio of grains of quality *A* were 0·80 and the handful contained a thousand grains, nine such handfuls out of every ten would contain from 780 to 820 grains of quality *A*. The answer to this is that the calculation given is correct when we know that the units of this handful and the quality inquired into have the normal independence of one another, if for instance the stirring has been complete and the character sampled for has been settled upon in advance of the examination of the sample. But in so far as these conditions are not known to be complied with, the above figures cease to be applicable. Random sampling and predesignation of the character sampled for should always be striven after in inductive reasoning, but when they cannot be attained, so long as it is conducted honestly, the inference retains some value. When we cannot ascertain how the sampling has been done or the sample-character selected, induction still has the essential validity which my present account of it shows it to have.

I do not think a man who combines a willingness to be convinced with a power of appreciating an argument upon a difficult subject can resist the reasons which have been given to show that the principle of universal necessity cannot be defended as being a postulate of reasoning. But then the question immediately arises whether it is not proved to be true, or at least rendered highly probable, by observation of nature.

Still, this question ought not long to arrest a person accustomed to reflect upon the force of scientific reasoning. For the essence of the necessitarian position is that certain continuous quantities have certain exact values. Now, how can observation determine the value of such a quantity with a probable error absolutely *nil?* To one who is behind the scenes, and knows that the most refined comparisons of masses, lengths, and angles, far surpassing in precision all other measurements, yet fall behind the accuracy of bank-accounts, and that the ordinary determinations of physical constants, such as appear from month to month in the journals, are about on a par with an upholsterer's measurements of carpets and curtains, the idea of mathematical exactitude being demonstrated in the laboratory will appear simply ridiculous. There is a recognised method of estimating the probable magnitudes of errors in physics,—the method of least squares. It is universally admitted that this method makes the errors smaller than they really are; yet even according to that theory an error indefinitely small is indefinitely improbable; so that any statement to the effect that a certain continuous quantity has a certain exact value, if well-founded at all, must be founded on something other than observation.

Still, I am obliged to admit that this rule is subject to a certain qualification. Namely, it only applies to continuous* quantity. Now, certain kinds of continuous quantity are discontinuous at one or at two limits, and for such limits the rule must be modified. Thus, the length of a line cannot be less than zero. Suppose, then, the question arises how long a line a certain person had drawn from a marked point on a piece of paper. If no line at all can be seen, the observed length is zero; and the only conclusion this observation warrants is that the length of the line is less than the smallest length visible with the optical power employed. But indirect observations,—for example, that the person supposed to have drawn the line was never within fifty feet of the paper,—may make it probable that no line at all was made, so that the concluded length will be

* *Continuous* is not exactly the right word, but I let it go to avoid a long and irrelevant discussion.

strictly zero. In like manner, experience no doubt would warrant the conclusion that there is absolutely *no* indigo in a given ear of wheat, and absolutely *no* attar in a given lichen. But such inferences can only be rendered valid by positive experiential evidence, direct or remote, and cannot rest upon a mere inability to detect the quantity in question. We have reason to think there is no indigo in the wheat, because we have remarked that wherever indigo is produced it is produced in considerable quantities, to mention only one argument. We have reason to think there is no attar in the lichen, because essential oils seem to be in general peculiar to single species. If the question had been whether there was iron in the wheat or the lichen, though chemical analysis should fail to detect its presence, we should think some of it probably was there, since iron is almost everywhere. Without any such information, one way or the other, we could only abstain from any opinion as to the presence of the substance in question. It cannot, I conceive, be maintained that we are in any *better* position than this in regard to the presence of the element of chance or spontaneous departures from law in nature.

Those observations which are generally adduced in favor of mechanical causation simply prove that there is an element of regularity in nature, and have no bearing whatever upon the question of whether such regularity is exact and universal, or not. Nay, in regard to this *exactitude*, all observation is directly *opposed* to it; and the most that can be said is that a good deal of this observation can be explained away. Try to verify any law of nature, and you will find that the more precise your observations, the more certain they will be to show irregular departures from the law. We are accustomed to ascribe these, and I do not say wrongly, to errors of observation; yet we cannot usually account for such errors in any antecedently probable way. Trace their causes back far enough, and you will be forced to admit they are always due to arbitrary determination, or chance.

But it may be asked whether if there were an element of real chance in the universe it must not occasionally be productive of signal effects such as could not pass unobserved. In answer to this question, without stopping to point out that there is an abundance

of great events which one might be tempted to suppose were of that nature, it will be simplest to remark that physicists hold that the particles of gases are moving about irregularly, substantially as if by real chance, and that by the principles of probabilities there must occasionally happen to be concentrations of heat in the gases contrary to the second law of thermodynamics, and these concentrations, occurring in explosive mixtures, must sometimes have tremendous effects. Here, then, is in substance the very situation supposed; yet no phenomena ever have resulted which we are forced to attribute to such chance concentration of heat, or which anybody, wise or foolish, has ever dreamed of accounting for in that manner.

In view of all these considerations, I do not believe that anybody, not in a state of casehardened ignorance respecting the logic of science, can maintain that the precise and universal conformity of facts to law is clearly proved, or even rendered particularly probable, by any observations hitherto made. In this way, the determined advocate of exact regularity will soon find himself driven to *a priori* reasons to support his thesis. These received such a soc-dolager from Stuart Mill in his Examination of Hamilton, that holding to them now seems to me to denote a high degree of imperviousness to reason; so that I shall pass them by with little notice.

To say that we cannot help believing a given proposition is no argument, but it is a conclusive fact if it be true; and with the substitution of "I" for "we," it is true in the mouths of several classes of minds, the blindly passionate, the unreflecting and ignorant, and the person who has overwhelming evidence before his eyes. But that which has been inconceivable to-day has often turned out indisputable on the morrow. Inability to conceive is only a stage through which every man must pass in regard to a number of beliefs,—unless endowed with extraordinary obstinacy and obtuseness. His understanding is enslaved to some blind compulsion which a vigorous mind is pretty sure soon to cast off.

Some seek to back up the *a priori* position with empirical arguments. They say that the exact regularity of the world is a natural belief, and that natural beliefs have generally been confirmed by experience. There is some reason in this. Natural beliefs, how-

ever, if they generally have a foundation of truth, also require correction and purification from natural illusions. The principles of mechanics are undoubtedly natural beliefs; but, for all that, the early formulations of them were exceedingly erroneous. The general approximation to truth in natural beliefs is, in fact, a case of the general adaptation of genetic products to recognisable utilities or ends. Now, the adaptations of nature, beautiful and often marvellous as they verily are, are never found to be quite perfect; so that the argument is quite *against* the absolute exactitude of any natural belief, including that of the principle of causation.

Another argument, or convenient commonplace, is that absolute chance is *inconceivable*. This word has eight current significations. The Century Dictionary enumerates six. Those who talk like this will hardly be persuaded to say in what sense they mean that chance is inconceivable. Should they do so, it would easily be shown either that they have no sufficient reason for the statement or that the inconceivability is of a kind which does not prove that chance is non-existent.

Another *a priori* argument is that chance is unintelligible; that is to say, while it may perhaps be conceivable, it does not disclose to the eye of reason the how or why of things; and since a hypothesis can only be justified so far as it renders some phenomenon intelligible, we never can have any right to suppose absolute chance to enter into the production of anything in nature. This argument may be considered in connection with two others. Namely, instead of going so far as to say that the supposition of chance can *never* properly be used to explain any observed fact, it may be alleged merely that no facts are known which such a supposition could in any way help in explaining. Or again, the allegation being still further weakened, it may be said that since departures from law are not unmistakably observed, chance is not a *vera causa*, and ought not unnecessarily to be introduced into a hypothesis.

These are no mean arguments, and require us to examine the matter a little more closely. Come, my superior opponent, let me learn from your wisdom. It seems to me that every throw of sixes with a pair of dice is a manifest instance of chance.

"While you would hold a throw of deuce-ace to be brought about by necessity?" [The opponent's supposed remarks are placed in quotation marks.]

Clearly one throw is as much chance as another.

"Do you think throws of dice are of a different nature from other events?"

I see that I must say that *all* the diversity and specificalness of events is attributable to chance.

"Would you, then, deny that there is any regularity in the world?"

That is clearly undeniable. I must acknowledge there is an approximate regularity, and that every event is influenced by it. But the diversification, specificalness, and irregularity of things I suppose is chance. A throw of sixes appears to me a case in which this element is particularly obtrusive.

"If you reflect more deeply, you will come to see that *chance* is only a name for a cause that is unknown to us."

Do you mean that we have no idea whatever what kind of causes could bring about a throw of sixes?

"On the contrary, each die moves under the influence of precise mechanical laws."

But it appears to me that it is not these *laws* which made the die turn up sixes; for these laws act just the same when other throws come up. The chance lies in the diversity of throws; and this diversity cannot be due to laws which are immutable.

"The diversity is due to the diverse circumstances under which the laws act. The dice lie differently in the box, and the motion given to the box is different. These are the unknown causes which produce the throws, and to which we give the name of chance; not the mechanical law which regulates the operation of these causes. You see you are already beginning to think more clearly about this subject."

Does the operation of mechanical law not increase the diversity?

"Properly not. You must know that the instantaneous state of a system of particles is defined by six times as many numbers as there are particles, three for the co-ordinates of each particle's posi-

tion, and three more for the components of its velocity. This number of numbers, which expresses the amount of diversity in the system, remains the same at all times. There may be, to be sure, some kind of relation between the co-ordinates and component velocities of the different particles, by means of which the state of the system might be expressed by a smaller number of numbers. But, if this is the case, a precisely corresponding relationship must exist between the co-ordinates and component velocities at any other time, though it may doubtless be a relation less obvious to us. Thus, the intrinsic complexity of the system is the same at all times."

Very well, my obliging opponent, we have now reached an issue. You think all the arbitrary specifications of the universe were introduced in one dose, in the beginning, if there was a beginning, and that the variety and complication of nature has always been just as much as it is now. But I, for my part, think that the diversification, the specification, has been continually taking place. Should you condescend to ask me why I so think, I should give my reasons as follows:

1) Question any science which deals with the course of time. Consider the life of an individual animal or plant, or of a mind. Glance at the history of states, of institutions, of language, of ideas. Examine the successions of forms shown by paleontology, the history of the globe as set forth in geology, of what the astronomer is able to make out concerning the changes of stellar systems. Everywhere the main fact is growth and increasing complexity. Death and corruption are mere accidents or secondary phenomena. Among some of the lower organisms, it is a moot point with biologists whether there be anything which ought to be called death. Races, at any rate, do not die out except under unfavorable circumstances. From these broad and ubiquitous facts we may fairly infer, by the most unexceptionable logic, that there is probably in nature some agency by which the complexity and diversity of things can be increased; and that consequently the rule of mechanical necessity meets in some way with interference.

2) By thus admitting pure spontaneity or life as a character of the universe, acting always and everywhere though restrained

within narrow bounds by law, producing infinitesimal departures from law continually, and great ones with infinite infrequency, I account for all the variety and diversity of the universe, in the only sense in which the really *sui generis* and new can be said to be accounted for. The ordinary view has to admit the inexhaustible mulitudinous variety of the world, has to admit that its mechanical law cannot account for this in the least, that variety can spring only from spontaneity, and yet denies without any evidence or reason the existence of this spontaneity, or else shoves it back to the beginning of time and supposes it dead ever since. The superior logic of my view appears to me not easily controverted.

3) When I ask the necessitarian how he would explain the diversity and irregularity of the universe, he replies to me out of the treasury of his wisdom that irregularity is something which from the nature of things we must not seek to explain. Abashed at this, I seek to cover my confusion by asking how he would explain the uniformity and regularity of the universe, whereupon he tells me that the laws of nature are immutable and ultimate facts, and no account is to be given of them. But my hypothesis of spontaneity does explain irregularity, in a certain sense ; that is, it explains the general fact of irregularity, though not, of course, what each lawless event is to be. At the same time, by thus loosening the bond of necessity, it gives room for the influence of another kind of causation, such as seems to be operative in the mind in the formation of associations, and enables us to understand how the uniformity of nature could have been brought about. That single events should be hard and unintelligible, logic will permit without difficulty: we do not expect to make the shock of a personally experienced earthquake appear natural and reasonable by any amount of cogitation. But logic does expect things *general* to be understandable. To say that there is a universal law, and that it is a hard, ultimate, unintelligible fact, the why and wherefore of which can never be inquired into, at this a sound logic will revolt ; and will pass over at once to a method of philosophising which does not thus barricade the road of discovery.

4) Necessitarianism cannot logically stop short of making the

whole action of the mind a part of the physical universe. Our notion that we decide what we are going to do, if as the necessitarian says, it has been calculable since the earliest times, is reduced to illusion. Indeed, consciousness in general thus becomes a mere illusory aspect of a material system. What we call red, green, and violet are in reality only different rates of vibration. The sole reality is the distribution of qualities of matter in space and time. Brain-matter is protoplasm in a certain degree and kind of complication,—a certain arrangement of mechanical particles. Its feeling is but an inward aspect, a phantom. For, from the positions and velocities of the particles at any one instant, and the knowledge of the immutable forces, the positions at all other times are calculable; so that the universe of space, time, and matter is a rounded system uninterfered with from elsewhere. But from the state of feeling at any instant, there is no reason to suppose the states of feeling at all other instants are thus exactly calculable; so that feeling is, as I said, a mere fragmentary and illusive aspect of the universe. This is the way, then, that necessitarianism has to make up its accounts. It enters consciousness under the head of sundries, as a forgotten trifle; its scheme of the universe would be more satisfactory if this little fact could be dropped out of sight. On the other hand, by supposing the rigid exactitude of causation to yield, I care not how little, —be it but by a strictly infinitesimal amount,—we gain room to insert mind into our scheme, and to put it into the place where it is needed, into the position which, as the sole self-intelligible thing, it is entitled to occupy, that of the fountain of existence; and in so doing we resolve the problem of the connection of soul and body.

5) But I must leave undeveloped the chief of my reasons, and can only adumbrate it. The hypothesis of chance-spontaneity is one whose inevitable consequences are capable of being traced out with mathematical precision into considerable detail. Much of this I have done and find the consequences to agree with observed facts to an extent which seems to me remarkable. But the matter and methods of reasoning are novel, and I have no right to promise that other mathematicians shall find my deductions as satisfactory as I myself do, so that the strongest reason for my belief must for the

present remain a private reason of my own, and cannot influence others. I mention it to explain my own position; and partly to indicate to future mathematical speculators a veritable goldmine, should time and circumstances and the abridger of all joys prevent my opening it to the world.

If now I, in my turn, inquire of the necessitarian why he prefers to suppose that all specification goes back to the beginning of things, he will answer me with one of those last three arguments which I left unanswered.

First, he may say that chance is a thing absolutely unintelligible, and therefore that we never can be entitled to make such a supposition. But does not this objection smack of naïve impudence? It is not mine, it is his own conception of the universe which leads abruptly up to hard, ultimate, inexplicable, immutable law, on the one hand, and to inexplicable specification and diversification of circumstances on the other. My view, on the contrary, hypothetises nothing at all, unless it be hypothesis to say that all specification came about in some sense, and is not to be accepted as unaccountable. To undertake to account for anything by saying boldly that it is due to chance would, indeed, be futile. But this I do not do. I make use of chance chiefly to make room for a principle of generalisation, or tendency to form habits, which I hold has produced all regularities. The mechanical philosopher leaves the whole specification of the world utterly unaccounted for, which is pretty nearly as bad as to boldly attribute it to chance. I attribute it altogether to chance, it is true, but to chance in the form of a spontaneity which is to some degree regular. It seems to me clear at any rate that one of these two positions must be taken, or else specification must be supposed due to a spontaneity which develops itself in a certain and not in a chance way, by an objective logic like that of Hegel. This last way I leave as an open possibility, for the present; for it is as much opposed to the necessitarian scheme of existence as my own theory is.

Secondly the necessitarian may say there are, at any rate, no observed phenomena which the hypothesis of chance could aid in explaining. In reply, I point first to the phenomenon of growth and

developing complexity, which appears to be universal, and which though it may possibly be an affair of mechanism perhaps, certainly presents all the appearance of increasing diversification. Then, there is variety itself, beyond comparison the most obtrusive character of the universe: no mechanism can account for this. Then, there is the very fact the necessitarian most insists upon, the regularity of the universe which for him serves only to block the road of inquiry. Then, there are the regular relationships between the laws of nature,—similarities and comparative characters, which appeal to our intelligence as its cousins, and call upon us for a reason. Finally, there is consciousness, feeling, a patent fact enough, but a very inconvenient one to the mechanical philosopher.

Thirdly, the necessitarian may say that chance is not a *vera causa*, that we cannot know positively there is any such element in the universe. But the doctrine of the *vera causa* has nothing to do with elementary conceptions. Pushed to that extreme, it at once cuts off belief in the existence of a material universe; and without that necessitarianism could hardly maintain its ground. Besides, variety is a fact which must be admitted; and the theory of chance merely consists in supposing this diversification does not antedate all time. Moreover, the avoidance of hypotheses involving causes nowhere positively known to act—is only a recommendation of logic, not a positive command. It cannot be formulated in any precise terms without at once betraying its untenable character,—I mean as rigid rule, for as a recommendation it is wholesome enough.

I believe I have thus subjected to fair examination all the important reasons for adhering to the theory of universal necessity, and have shown their nullity. I earnestly beg that whoever may detect any flaw in my reasoning will point it out to me, either privately or publicly; for if I am wrong, it much concerns me to be set right speedily. If my argument remains unrefuted, it will be time, I think, to doubt the absolute truth of the principle of universal law; and when once such a doubt has obtained a living root in any man's mind, my cause with him, I am persuaded, is gained. XXVII

C. S. PEIRCE.

PSYCHICAL MONISM.

IN modern thought, ever since Descartes introduced into the conception of all-comprising nature that perplexing distinction between thinking and extended substance, the problem of reconciling so radical a dualism has formed the main task of those who have busied themselves with philosophical interpretation.

In the light of the Cartesian system there seemed to exist two entirely disparate, independent worlds; the one in individual consciousness, the other outside of it; the one made of mental, the other of material stuff.

How to conceive these two antithetical worlds as interdependent constituents of one and the same unitary nature is, after many discarded attempts, still the principal endeavor of systematic thinking.

Every student of philosophy knows how Descartes himself ascribed the evident concordance and intercommunication of the two worlds to the miraculous decree and intervention of the Deity; how Spinoza sought to overcome the distracting dilemma by proving that the two substances are but attributes of one single absolute substance; how Leibnitz made both realms, that of inwardness and that of outwardness, form a consistent universe and keep consonant time by means of a divinely pre-established harmony; and how numbers of less illustrious devices likewise failed to gain general acceptance.

A more important part in the development of modern thought was played by those other attempts, which strove to reach a monistic interpretation by showing that nature in all its manifestations is constituted, either solely by mind and its original endowments; or,

on the contrary, solely by matter and its original endowments. Thinkers versed in physical science felt inclined to look upon the material world as the matrix of all natural occurrences; while those versed in psychical science were apt to conceive the mental world as containing within itself all there is of nature.

The physical hypothesis has proved its eminent efficiency by leading to a vastly more correct and faithful knowledge of the perceptible universe than had ever been previously attained.

Still, from the psychical standpoint it became nevertheless evident beyond contention, that all so-called qualities of matter, all that in any way enters into our perception of it, is composed of nothing but mental constituents. And this means simply, that, whatever we are actually conscious of, must of necessity form part of our own consciousness, and not of anything outside of it.

As to the truth of this fundamental psychological conception there is no longer any dispute among philosophers. But there remains to be solved the all-important question, whether or not there exists outside this consciousness of ours, either beyond its peripheral, perceptual range, or beyond its central, conceptual sphere, another world which it merely symbolically reveals. And in case such another extra-conscious world is found actually to exist, how it comes to constitute, together with the world of consciousness, that unitary system of being of which we mentally and bodily seem to form part.

Professor Dewey in a series of articles in *Mind* (Nos. 41, 42, 49, 57) and in one recently published in this journal (Vol. II, No. 1) advocates—more profoundly and consistently than has been done before by any Neo-Kantian or Neo-Hegelian—the view, that consciousness itself intuites all phenomena of nature by force of its own intrinsic activity, imparting to them their significance as knowledge by discriminating their specific position and value within its own all-comprising organic totality of being. He believes thus in no other world than that of self-consciousness; asserting that neither its perceptual nor its conceptual content are significative of any reality beyond.

The editor, though an ardent defender of cosmic Monism, is

by no means a convert to such purely psychical monism. He maintains, on the contrary, in the same issue of *The Monist* (p. 85), that, "The mental picture of a tree becomes a symbol for a special object outside of us, and is projected to the place where experience has taught us to expect that object." Consequently, the mental picture refers as knowledge to something outside of us, to something not forming part of our consciousness.

The present writer believes likewise, that the perceptual tree is merely a mental symbol signalising an extra-mental, sense-stimulating existent; and that the value of this symbol as knowledge consists altogether in its implication of the existence of an entity subsisting outside our own being and its consciousness, and having power to affect our sensibility in definite more or less recognised ways.

The editor and the present writer assert then, that the content of perceptual consciousness forms merely a symbolical representation of a corresponding reality subsisting outside consciousness; while Professor Dewey acknowledges as really existent only self-consciousness, and nothing outside of it, either peripherically stimulating the senses, or centrally imparting universality to individual intelligence.

The former view frankly admits duality in nature, so far as conscious and extra-conscious existence are concerned. And in order to overcome this dualism of *ordo idearum* and *ordo rerum*—essentially the same dualism as bequeathed to us by Descartes—it has to show how the world within consciousness with its "mental picture," and the world "outside of us" containing the existent symbolically represented; how these totally disparate worlds come to constitute a unitary nature, whose divers modes of existence are throughout interdependently connected.

It is clear that the reality symbolised by the "mental picture"—if any such reality actually exists—can be known to us solely as thus mentally symbolised, and not known to us in any way as it subsists extra-mentally "outside of us," as it subsists in itself when not thus symbolically represented by our casual and intermittent perception of it.

The mental picture being a mere representative symbol must needs differ *toto genere* from the non-mental existent symbolised thereby. We know only what as mental representation is forming part of our consciousness. We cannot possibly know anything we are not conscious of. The entity "outside of us," the "thing in itself"—if it at all exists—is therefore as such of necessity unknown to us. This confession of ontological ignorance is unavoidably involved in the acceptance of a symbolised reality "outside of us."

The complex and prodigious difficulties in the way of a monistic interpretation, when we start with the dualistic presupposition of a conscious and an extra-conscious world, are all effectively circumvented, as soon as with Professor Dewey we deny altogether the existence of a world of "things-in-themselves" or sense-affecting existents, and roundly assert that consciousness as such constitutes, comprises, and has direct knowledge of ultimate reality; that it is in fact itself the absolute all-sufficient and all-efficient entity.

To understand the philosophical strength and influence of a position so strangely at variance with that of current common sense, which holds as self-evident the existence of body as well as mind, we have somewhat to probe its deep-laid foundations in the history of modern thought

It was rendered plausible through Descartes's, Locke's, Berkeley's, and Hume's philosophical argumentation, that what we are consciously aware of, what is actually present to us as perception or "idea," and therewith as the world at large, is altogether made up of a more or less complex combination of our own actual and remembered sensations.

The conscious content itself was thus necessarily held to constitute the exclusive object of philosophical research. And by starting with sensations as its primordial elements, and taking all "ideas," or facts of memory, to be but faint reproductions of such elements, it became the task of investigators "of the human mind" to analyse the given content of consciousness into these its assumed elements, and to discover the "laws" or general ways of their combination.

Proud of its purely experiential method, concerned about nothing but what is actually found present in consciousness, this mode

of philosophising disclaimed, in consequence, all knowledge of any "power" giving rise from without to sensorial "impressions" and their order of conscious emergence. And it ignored likewise the existence of any "power" combining and systematising them from within; and, moreover, of any entity for whom the sensorially constituted experience had intelligent significance.

Such nominalistic, sensorial idealism has until lately reigned supreme in English philosophy. Previous to the new departure introduced by it philosophical interpretation had always followed the method of conceptual evolution, carried on according to the rules of formal or deductive logic. It took some widely inclusive, ready-made concepts as its starting points or major premises, and extracted therefrom all knowledge that seemed to be implicitly contained in them.

Even Kant in his younger days had no idea that valid knowledge or truth could possibly be attained in any other way than by logically deducing it from ready-made premises. At a later period he learned from Hume to distinguish between what he termed analytical and synthetical propositions, and what had been called by the former thinker connection between vivid impressions or matter of fact on the one side, and connection between their faint copies or the so-called ideas on the other side.

The discovery on the part of Kant, that our knowledge of the actual connection of matters of facts has in every instance to be learned from direct experience and cannot be ratiocinatively deduced from ready-made general notions, was a complete revelation to him. It changed his entire way of thinking, and became the starting-point of his system of critical or transcendental philosophy. He saw clearly, that, if all instructive cognition is gained, and has always been gained, solely by means of actual experience, if it has been synthetically built up bit by bit as directly given to us, without our being able to construct a valid system of knowledge transcending in any way actual experience; that reason then as a knowledge-constituting faculty is impotent, and that metaphysics, as the science of a realm of intelligible existence, must be ever more rejected as a pure illusion.

Kant's thought, like that of most of our own rationalistic thinkers, was however predominantly swayed by the belief in an intelligible world, the veritable home of man's spiritual being, where it eternally abideth in close communion with a supreme creative intelligence. After a brief attack of Humian scepticism, the theologically trained, though rationally wide-awake and profound thinker, set out to examine the faculties of reason with a view to discover a philosophically legitimate ingress into that cherished realm of intelligible subsistence. Hitherto reason had been effectively used in philosophy only as an analytic instrument. Real knowledge being, however, as proved by Hume, a matter of synthesis, it would evidently be making proper way toward a rationally conceived intelligible world, if it could be proved that reason is itself in possession of synthetical powers.

After many years of profound meditation in this direction, Kant gave its results to the philosophical world. He had become convinced that mathematical truth, instead of being analytically derived as hitherto believed, is on the contrary built up synthetically by intelligence itself, and this without the aid of externally imparted experience; that intelligence is therefore efficient to form synthetical propositions *a priori*. It followed, as a matter of course, that time and space in which mathematical figurations take shape, are not conditions of existence outside of us, but original forms of our own perceptive faculty, and that intelligence by dint of its synthetical powers constructs mathematical figurations within these perceptual forms. And finally the conclusion was reached that time and space, the empty forms of perception, being themselves wholly deficient of any kind of activity, it must be intelligence alone which possesses synthetical efficiency, which exercises in fact whatever activity is operative in the conscious world.

But though Kant enthroned intelligence as the creator of pure mathematics, and endowed it with the exclusive gift of synthetical efficiency, he did not see his way to constitute it also the creator of the sense-given material that comes experientially to fill the empty and passive forms of perception. Against all denunciations of his system as purely idealistic, he insisted that there exists outside our

being and its consciousness a world of things-in-themselves, having power to affect our sensibility, so that time and space, its receptive forms, become filled with experiential, though wholly unsynthetised material.

Reluctantly, though in faithful adherence to the unbiassed results of his investigation, he was at last led to declare that intelligence or reason as an instrument of knowledge—called by him theoretical reason in contradistinction to practical reason, conceived as the leading principle of moral conduct;—that such theoretical reason has power only over sensorially given material, and is incapable of attaining knowledge of the intelligible sphere.

Still Kant regarded his so-called categories or synthetical functions of reason as modes of activity, belonging not only to individual reason, but to reason in general. And on the strength of this realistic generalisation he attributed to them the power of imparting necessity to synthetical propositions, such propositions—otherwise merely subjective or empirical—being rendered thereby objective or universally valid. He showed, moreover, that the relation of every kind of knowledge to a common centre of all-inclusive awareness,—that this "synthetic unity of apperception" as he called it,—presupposes an intelligible ego, whose veritable nature becomes however nowise manifest within our time-and-space-conditioned experience. And he taught that an all-comprehending intelligible being had to be hypostatised in order to complete the totality of rational knowledge.

Thus, instead of giving us a monistic philosophy, Kant's theoretical speculations disclosed, on the contrary, a tripartite world. At the centre the non-manifest intelligible ego in communion with a supernatural sphere, and conceived as the veritable bearer of the synthetical reason. In the median and only known region the synthetical reason itself, constructing and cognising nature, by synthetically elaborating the chaotic manifold in time and space. And at the periphery, beyond our own being and its perception, an unknowable realm of things-in-themselves affecting our sensibility.

So complex an appearance did existence assume under Kant's critical inspection. Contemplative man, however, never ceases to

hanker after a monistic world-conception. Though individualised, he feels himself one with universal being, and strenuously strives to understand how those bonds of union are established, and what part he in verity is playing in this stupendous drama of being and becoming.

To most philosophers, before Kant, knowledge seemed to be given to us ready-made, first conceptually as innate ideas or universal notions; and then perceptually as the finished image of an outside world.

Kant has exerted, and still exerts, a controlling influence over thinkers by having systematically demonstrated, that not only knowledge, but nature itself as we know it, is constructed by powers inherent in our own being. He taught that we ourselves, by force of our combining and ordering intellectual organisation, fashion out of meaningless sense-material the wondrous world we know. And, moreover, that by force of our intelligible being we have power to bend the otherwise rigorously mechanical course of nature in compliance with moral injunctions.

No wonder that so inspiriting a philosophy electrified to new vigor and valiant self-reliance the dogmatically slumbering life of German thought. And it was Fichte, above all other followers of Kant, who by his fervent exposition kindled in crowds of hearers the vivifying spark of this "new philosophy" of all-efficient intelligence.

Fichte is the real father of such psychical monism as has recently found so proficient an expounder in Professor Dewey. Fichte understood, what Kant failed to see, that the "dynamical idealism" of nature-constituting reason involves, not merely the *elaboration* of sense-given material, but the *out and out production* within consciousness of the entire world of perception. For perception undeniably takes place within our own being, and must therefore be, as regards matter as well as form, the outcome of powers inherent in ourselves. Between a consistent dream and the apperception of reality the difference lies merely in our feeling, in the latter instance, compelled in a peculiar manner to perceive what we perceive. But this feeling of compulsion is likewise a constituent of our own conscious-

ness, and, moreover, under the influence of hallucinations even this test of reality fails us.

According to Fichte's matured thought, our being consists altogether in intellectual activity, an activity rendering explicit by means of self-consciousness what it already implicitly contains. And it is universal being that becomes thus self-conscious in us. Infinite reason, constituting a system of ideas, a spiritual organisation, is the fount and origin of all existence, its own self-revelation becoming manifest in finite beings.

Thus, by force of logical consistency, was eliminated from Kantian transcendentalism the world of things-in-themselves as superfluous to all-constituting intelligence. And the unification of individual self-consciousness with universal intelligence was established by considering individual self-consciousness as partaking in the self-revealing activity of universal intelligence.

Hegel elaborated systematically the psychical or idealistic monism thus foreshadowed in Fichte's later writings. Philosophical interpretation turns principally upon the source and import of consciousness. And from the recognition of the fact, that all constituents of perception form part of this consciousness of ours, it obviously follows that objects, and indeed the entire objective world realised in perception and solely as perception; that the realisation of this entire world of perceptual objects is in verity realisation of a world contained in our own being or subject. Subject and object are therefore, from this point of view, at bottom identical; the objective world—our human bodies included—being a self-revelation of our all-comprehending subject. Mind as well as matter, that which we call mental and that which we call material, are thus mere abstract terms denoting the subjective and objective sides of one and the same reality.

This reality transcendental idealism declares to be "intellectual activity." It is intellectual activity which—from its point of view—is revealing itself in the conscious content, becoming thus self-conscious. This process of recognition of one's self as subject-object, as the unitary essence and completion of both, is what Hegel calls the "Idea." And with him theoretical or logical self-recogni-

tion and practical or ethical self-realisation coincide as "Absolute Idea." For to think absolute truth and to will its realisation are but two sides of one and the same activity. Thought, intelligence, reason, knowing itself as in every sense veritable being is thus the absolute One and All.

Such out and out psychical monism is the legitimate outcome of a conception which takes the content of consciousness to be ultimate reality, signifying nothing beyond itself; and which then constitutes a spiritually conceived entity, called thought, intelligence, or reason, as the originator and bearer of such consciousness.

After a period of glorious triumph the Hegelian philosophy of self-evolving intelligence became a general laughing-stock at home and abroad. This ignominious fate overtook it, first in consequence of its fawning prostitution by the master himself to the reactionary service of Church and State; and then also in consequence of the ridiculous "pyrotechnical" abuse of its dialectical method by the "Young-Hegelians."

However, by "going back to Kant," the teachings of transcendental idealism have in our time once more gained the ascendency, and have succeeded not only in conquering materialism, but also in invading and almost supplanting English experientialism.

In Germany, after a season of complete estrangement between science and philosophy, a re-approachment was effected by the Neo-Kantian movement. It originated principally in the recognition on the part of science, that sense-perception is above all a psychical and not a purely physiological process, a mental not a material fact; that therefore the effort to arrive at a correct "theory of knowledge" is by no means a vain endeavor, and that psychics as well as physics deserves a place in the hierarchy of sciences.

In England and America the Neo-Kantian movement owed, on the other hand, its success, above all, to such theistic rationalism as found popular expression in "Robert Elsmere." In Professor Caird's words it is said to afford a means for the "vindication of the religious consciousness." And this it accomplishes "by an objective or absolute synthesis," which establishes "the indivisible unity

of the intelligence and the intelligible world," "the unity of man as spiritual with an absolute spirit."

Dr. Hutchison Sterling's "Secret of Hegel" gave the first effective impulse to this transcendental mode of thinking among university men of a speculative turn. The late Thomas Hill Green of Oxford and Prof. Edward Caird of Glasgow became its foremost exponents, and made numerous converts. The former by elaborately disclosing, by force of Kant's principle of synthetical reason, the insufficiency of the sensorial experientialism generally accepted in England since Locke's "Essay Concerning Human Understanding." The latter by consistently developing the idealistic and transcendental implications of this same principle of synthetical reason.

As repeatedly noticed, and never to be lost sight of, transcendental idealism derives its convincing force from the undeniable truth, that whatever we are directly aware of forms part of our own consciousness. This involves the indivisible unity of such fact as we are directly conscious of and the faculty through which we are conscious of it. This unity of the realising self and the realised world, of object and subject as content of consciousness; or rather the unity of the objective and subjective factors of it, this subject-object oneness of conscious states and occurrences is an irrefutable truth, from which one has to start, whatever direction one may take. You assert, then, that that which exists thus interblended as consciousness is itself ultimate reality, and you will encounter but little difficulty in deducing therefrom a pretty plausible psychical monism. For the power through which and as which this ultimate reality exists is then immanent in us individually. And when this power is conceived as intelligence or spirit, and the world at large as existing solely as content of this spirit's consciousness, or indeed as such consciousness itself, it is clear that our own self-and-world-awareness must be—according to this view—identical in essence with the spiritual power which is ultimate and universal Reality.

In self-consciousness, when regarded as a totality of all actual and potential awareness, our feelings as well as the perceptual objects composed of them constitute an organically completed order. They all stand in definite and interdependent relations to our unitary

being. This all-comprising being has time and space as modes of gradual self-realisation, but is not—according to transcendentalism—itself in time and space. And this is undeniably true, so far at least as the being that combines all transient events of experience into a unitary system of permanent knowledge cannot possibly itself form part of the ephhemeral flux of conscious states experienced by it.

Still the multifold individuations of the ultimate reality into separate personal self-consciousnesses and deciduous bodily organisms forms the great, if not insuperable, obstacle in the way of psychical monism. If, on the one hand, we take with Green and Professor Caird individual self-consciousness as a "reproduction," and not as a mere phase of universal consciousness; and on the other hand admit a natural and gradual development "of man as an animal organism," instead of proving such natural development to be a misconception of our time and space bound recognition, we are far from having as yet succeeded in establishing a consistent psychical monism on Kantian lines. His tripartite world remains ununified.

To achieve its unification is, however, after a profound study and appreciation of the difficulties to be encountered, the arduous task Professor Dewey has courageously undertaken. To accomplish his purpose he has to show how individual consciousness proves itself to be ultimate reality, and as such identical with universal consciousness; how man, appearing among other perceptible objects in multifold individuated specimens as a gradually developed organism, is nevertheless in reality a complete, all-comprising entity, not essentially subject to time, space, or numerical limitations. And he has to make clear how all conscious content, including the external world as well as the feeling and thinking subject, has no other existence and significance than in and for consciousness.

Professor Dewey maintains that individual consciousness is in reality one with universal consciousness, because it comprehends within itself subject-and-object-consciousness; the abiding consciousness of oneself as an ever-changing individual, and that of the world at large, though figured in transient groups of sensations. This being so, that which is thus the bearer and realiser of all being and becoming in nature, cannot itself form part of this becoming,

but must—according to Professor Dewey's view—be eternal and absolute. The all-comprehending consciousness—and there is no existence outside of it—is thus identical with universal intelligence, identical with that eternally active intelligence which is everlastingly creating the organic synthesis of all being and becoming.

"Consciousness the ultimate fact reveals itself as reason." Sensations have no self-existence, no meaning in themselves. They exist only as intellectually apprehended and for intelligence alone. It is from intellectual interpretation that they receive their entire significance. On solicitation of sensations the ideal content of universal intelligence becomes partially and interruptedly revealed to individual consciousness. The sole office of sensations is to give in us occasion to this self-realisation of the eternal content of intelligence.

Professor Dewey establishes his psychical monism by discovering self-consciousness as the Absolute, the One and All. Individual idealism or so-called solipsism, such as expounded by Fichte in his earlier writings from the side of intellect, and in the writings of English experientialists from the side of sensation, this individual idealism presents itself likewise as a psychical monism, but as an absurdly narrow one. Professor Dewey points out how it fails to understand that by constituting mind, as such, the ego or subject for which all experience exists, it artificially divides our unitary consciousness into two separate constituents, and takes the subjective constituent to be the bearer and realiser of the objective constituent; while in reality both constituents are but elements of consciousness in general; are in fact completely unified in eternal and absolute consciousness.

Now it is perfectly true, that during conscious awareness object and subject-consciousness are inextricably interblended so as to constitute a unified experience. It is true also, that the veritable subject that thus consciously experiences, and that furthermore imparts intelligent meaning to such experience, cannot itself form part of these its own fragmentary and transient moments of awareness. Comprehending them all, it must evidently be an enduring, at least a relatively persistent being. It is undoubtedly to such a persistent

being or subject that experience gradually accrues, and in whom it is all retained and organised into more or less systematic order.

But is there the least warrant for assuming that this persistent subject, weaving thus intelligent experience out of its transient conscious states, is itself "consciousness" or "intelligence"?

Intelligent consciousness is very obviously only one of the functions of the persistent subject, and by no means its being or essence. And the experience accruing to it, that at least of the external world, bears nowise the characteristics of Platonic reminiscence, does nowise consist in self-revelation, in the becoming explicitly aware of what already implicitly existed within itself. We may indeed say, that our emotions, when aroused, constitute such self-revelation. But, for instance, yonder visual figuration, consisting of nothing but colored forms, though intelligently interpreted as a landscape with plains, woods, and creeks; interpreted thus by the aid of no end of former experience; this landscape now perceived by me for the first time was certainly not implicitly immanent in my consciousness previous to all my individual experience. Its conscious realisation does assuredly not render explicit as objective experience what for ever has been an organic member of my self-consciousness. What is immanent in my being—not in my consciousness—is the sensorial faculty of symbolically picturing whatever sense-affecting agent is placed before me. The conscious picture itself is an evanescent phenomenon, having no steadfast existence or reality.

To assert—as is usually done by transcendentalists and by Professor Dewey among them—that our individual experience, when—as mostly occurs—not actually conscious to ourselves, exists then nevertheless as conscious content of a universal being; to venture such an utterly gratuitous assertion, even when merely hypothetically advanced, transcends all legitimate inference from given facts. When declared to be positively justified by given facts, it all too obviously betrays the theological bias by which it is inspired, the set purpose of vindicating the religious consciousness which has faith in "the unity of man as spiritual with an absolute spirit."

Through consciousness we indeed become aware of the divers

faculties of our being, together with their functionally accruing experience. All this, however, rises into conscious awareness only at times, when casually awakened. To give to the vast system of consciously latent being and experience the name of "consciousness," to call that "consciousness" whose principal distinction is to constitute a persistent subject with an organised system of experience abiding for the most part in extra-conscious latency; to do this only because all this extra-conscious existence may and does at times become more or less conscious; this is surely committing the fatal error of denoting a state of things by its outright opposite.

There is no denying that most of the content of our being is usually not present in consciousness. Consequently, abiding thus outside consciousness, it cannot possibly form part of consciousness either individual or universal.

Nothing could be more to the point than Professor Dewey's statement, that "only a living actual fact (let us say existent instead of fact) can preserve within its unity that organic system of differences in virtue of which it lives and moves and has its being." There is not the least doubt that the subject, who at times is conscious of more or less of his experience, is exactly such an existent as here described. But consciousness, though the medium in which and through which everything is realised, is itself but an intermittent function of that living actual subject which preserves within its unity the organic system of differences in virtue of which it lives and moves and has its being. The consciousness of the subject conveys information to it only interruptedly and in broken bits. These become organically unified into a more or less consistent totality of experience. But this process of unification takes place, not in the dream like stuff which makes up consciousness, but in the persistent, extra-conscious matrix whence our ever lapsing, ever renewed moment of conscious awareness emerges ready-made.

The subject capable of thought and feeling becomes thinkingly and feelingly manifest to *itself*, when its functions through which consciousness arises are in operation; becomes manifest as bodily active to *other sentient beings also*, when its functions through which such activity arises are in operation.

But if the real nature of the experiencing subject is not self-consciousness or intelligence, what then can it be?

Idealists, and with them Professor Dewey, become such by believing that the perceptually realised objects are themselves veritable reality, and not mere symbols of extra-conscious reality. Now can they in all sincerity bring themselves to believe that a baby—to use one of Professor Dewey's illustrations—which experiences a sensation, say a pain caused by the prick of a pin, that this pain-experiencing baby is no other than that colored form within the perceptual consciousness of may be half a dozen spectators; and that it is the perceptual pin within the consciousness of each of them that has pricked the baby and caused the pain?

Does the pain-experiencing baby derive its existence from the fact that the intellect of the spectator interprets the perceptual form within his consciousness to signify a baby, which has forever implicitly formed part of the organic content of his own self-conscious ness?

Surely the pain experienced by the baby is not experienced by the perceptually realised baby, not by the baby existing as interpreted perception in the consciousness of him who perceives it. The pain experienced by the baby does nowise form part of the consciousness of the perceiver. Consequently and incontestably, the subject that experiences the sensation, that experiences in fact any kind of feeling or thought, is itself an extra-conscious being, a being only casually and symbolically realised in consciousness.

And if the perceptual baby is merely a conscious symbol signalising an extra-conscious existent, then all perceptual existence, all that constitutes what we perceptually realise as nature, symbolises likewise an extra-conscious reality, a reality that has power so to affect our sensibility as to arouse in us perceptual representations of itself and its characteristics.

The matter stands then exactly as denied by Professor Dewey. It is indeed the "baby thing-in-itself which is affected," and it is "a world thing-in-itself which calls forth the sensation." It is not, as maintained by Professor Dewey the baby known to him as his own perception which experiences the sensation by having been

pricked within the beholder's consciousness by a perceptually constituted pin.

But if the entity, which affects the beholder's sensibility and awakens in him the percept of a baby, exists in verity outside his, the beholder's, consciousness, and is known to him only as thus symbolically pictured by his own percept; such sense-affecting entity is, on the other hand, nowise to be construed as the unknowable "First Cause," nowise as that protean Persistent Force, which Mr. Spencer imagines capable of assuming every kind of mental or material appearance.

The so-called material or physical modes which constitute in the beholder the perceptually realised baby, and the so-called immaterial or mental modes which are experienced by the baby as his sensations and emotions; these material and mental modes are in no sense the manifestation of an "Absolute Force" or "inscrutable Power," as our Spencerians would lead us religiously, and almost theologically to believe.*

The material modes that constitute the perceptually realised baby are awakened in the beholder by a definite sense-affecting existent, which is thus revealing not only its bare presence, but most vividly and minutely also its perceptible and distinguishing characteristics. And in the same manner it makes also known that it is interdependently connected with the vast system of sense-affecting entities, that constitutes nature in general.

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* Mr. Spencer grapples with the problem of ultimate reality from three different and widely divergent standpoints. First, by assuming that our out and out conditioned nature and knowledge presupposes the existence of an "Unconditioned Reality," he arrives at the conception of an "Absolute Cause." Second, by attributing—in keeping with the principle of the Conservation of Energy, all physical and psychical activity to the interconvertible play of modes of force, he arrives at the conception of an "Absolute Force," whence all these manifest modes proceed; hinting, moreover, that, as our experience of force-manifestation is of a psychical nature, the "Absolute Force" may rather be conceived as psychical than as physical. Third, besides explaining at times that the psychical and physical modes, instead of being interconvertible, are only two different aspects of one and the same reality—and contrary to his assumption of the interconvertibility of psychical and physical modes proceeding from an Absolute Force, he advocates in his *Transfigured Realism* the view, that our perceptual consciousness figures representatively the corresponding characteristics of a world of things-in-themselves. No wonder that Spencerians are getting somewhat mixed, as the saying is.

All reality is interdependently conditioned. The "Unconditioned Reality" of the Hamiltons, Mansels, and Spencers, has nowhere any existence, either in consciousness or outside of it. It is altogether a fictitious, superfluous, and most misleading conception.

As regards the mental modes experienced by the baby, they are evidently exclusively his own affections as a highly and most specifically organised being, and not by any means are they modes of appearance of that most empty abstraction "The Unknowable," that has with so many believers usurped the throne of their former anthropomorphic Deity.

This coiled up thing over there, is it a rope or a snake? I see it move, and my intellect interprets it to be a snake. Surely the significance of the interpretation does not consist in my realising what was already implicitly contained in my consciousness, but in knowing that in contact with the being out there, which forms no part whatever of myself though perceptually realised by me, I shall become affected in certain additional ways taught by former experience.

Will any unbiassed and competent judge assert that the far-fetched idealistic interpretation is more in accordance with what we really experience, than the very simple one here given?

No doubt the immediate object of physical observation is not the thing-in-itself, but its perceptual realisation. It is such, however, only as symbolical representation of something subsisting outside consciousness, only as a conscious affection awakened with compulsory force in the observer from without. The observer offers his diversely differentiated and delicately attuned sensibilities to the outside world and carefully notices its specific modes of reaction upon definite modes of stimulation. This in truth is the method of scientific observation, from which all conclusions regarding the characteristics of nature are drawn.

The conscious subject phylogenetically evolved in constant interaction with the medium in which he lives and moves and has his being, possesses realising faculties so adjusted as to correctly subserve his needs in relation to such a medium. He then furthermore uses these faculties in order to gain a fuller and more accurate

knowledge of further perceptible characteristics of this same medium.

A monistic interpretation of nature cannot possibly be reached by assuming consciousness or intelligence to be ultimate reality, and as such the One and All. It can be reached only by recognising that consciousness is a function of subjects that stand in definite relations to the rest of nature, and have power along with the other constituents of nature so to affect the sensibility of other sentient beings as to cause to arise therein the symbolical representation of themselves.

Systematised experience consists in the organised totality of such symbolical representations. And this organised totality of experience exists as potential possession of the subject in extra-conscious latency, in what we figuratively call memory. Emerging on occasion into consciousness it reproduces more or less faithfully the order and connection of the manifold that constitutes the sense-affecting universe.

In highly developed sentient subjects self-realisation or the "inner life," which arises from the activity of their emotional and above all their social nature, gains predominant influence over their sensual and perceptual experience, urging them so to transform the given aspect of the outer world as to render it subservient to the aspirations of that inner life.

EDMUND MONTGOMERY.

THE CONSERVATION OF SPIRIT AND THE ORIGIN OF CONSCIOUSNESS.

THE consideration of the relation that subsists between body and mind is a topic that has led to several theories, one of which has found favor with many on account of its supposed monistic implications. Dr. Carus in his work "The Soul of Man" seems to adopt that theory, and his method of explaining the matter is one of notable superiority. He says:

"Matter and mind (the elements of feeling) are to be considered as one—not the same, but one. They are as inseparable as are the two sides of a sheet of paper. If we look at it from the mind side its activity represents itself as elements of feeling and all kinds and degrees of actual feelings. If we look at it from the matter side its activity represents itself as motions or as all kinds of potential and kinetic energy."

This doctrine of a double-faced unity has no doubt been favored because it has seemed the best and perhaps the only refuge available against the various forms of dualism. Still this same doctrine is very far from inducing that final pacification of mind which we rightly expect from a competent theory. It is open to the charge of being arbitrary, and it brings no access of insight.

The expressions of those whom we must suppose to be well affected towards any doctrine that gives promise of a monistic issue show this to be the case. Thus Tyndall says:

"I do not think that he (i. e. the materialist) is entitled to say that his molecular groupings and his molecular motions explain everything. In reality they explain nothing. The utmost that he can affirm is the association of two classes of phenomena of whose real bond of union he is in absolute ignorance. *The problem*

of the connection of body and soul is as insoluble in its modern form as it was in the prehistoric ages."

And Huxley protests that,

"How anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue is *just as unaccountable* as the appearance of the Djinn when Alladin rubbed his lamp."

In truth those who might be expected to speak with considerable reserve in regard to the inabilities of human attainment have emphasised without due sobriety the insuperable aspects of the problem. The past history of culture should have counseled caution, especially in view of the certainty that consciousness is *somehow* dependent upon nerve action.

It is submitted that the recent progress of science should induce a hopeful temper of mind on this question. Not only have physiology and psychology brought to light more results in the last decades than in centuries past, but in positive monism and formal thought philosophy has also attained to a clearness of method which will prove beneficial to all special investigations. A clear and concise statement of the new positivism is found in the chapter Form and Formal Thought of "Fundamental Problems" by Dr. Carus. Any one who has watched the development of the algebra of thought and the philosophy of logic, will naturally expect signal aid towards the solution of the world-questions from a proper consideration of form and the laws of form. In Dr. Carus's book and especially in the above mentioned chapter will be found a most popular exposition of that subject.

Those who hold that form and formal thought is the very constituted means by which our information with respect to real existence may be improved, ought to regard it a decided step towards the solution of any hitherto apparently inexplicable problem, if we only but find ourselves able to *formulate* an idea or process that mediates between the known and the unknown, and represents to our insight how it is possible to think of a phenomenon in accordance with notions that yield perceptible imagery.

Riemann in what has been well characterised as his "stu-

pendous" essay on "The hypotheses that lie at the basis of geometry" remarks:

"We are quite at liberty to suppose that the metric relations of space in the infinitely small do not conform to the hypotheses of geometry; *and we ought in fact to suppose it if we can thereby obtain a simpler explanation of phenomena.*"

So also Jevons in his "Principles of Science" commenting on "The Character of the Experimentalist" refers to the audacity of speculation that characterised Faraday and that was the leading of his efforts towards some of his most brilliant discoveries. He says:

"We have only to notice the profound conviction in the unity of natural laws, the active powers of inference and imagination, *the unbounded license of theorising.*"

Theory must precede experiment. We must formulate before we can verify. The words of Faraday: "Let us encourage ourselves by a little more imagination prior to experiment," shows us the method he followed.

Recent developments in connection with the study of electricity supply us with at least an analogy that may instruct us as to how we may *suppose* the appearance of consciousness as a result of nerve action.

The nature of electricity has long been an unformulated thesis. That it may be produced by the motion of matter is proved by every dynamo in operation: indeed the oldest experiments in static electricity are to the same effect.

At the present time it seems to be an acceptable doctrine or at least a good working hypothesis that electricity and magnetism are manifestations of that once hypothetical medium called *the ether.*

Prof. G. F. Fitzgerald in his opening address before Section A of the British Association for the Advancement of Science in 1888 made these very important remarks:

"In a presidential address on the borderlands of the known, delivered from this chair, the great Clerk Maxwell spoke of it as an undecided question whether electro magnetic phenomena are due to direct action at a distance or are due to the action of an intervening medium. The year 1888 will ever be memorable as the year in which this great question has been experimentally *settled* by Hertz in Germany. Henceforth I hope no learner will fail to be impressed with the theory—*hypothesis no longer*—that electro-magnetic actions are due to a medium pervading all known space."

That the ether really exists: that it is a proved fact and that it is the substantial basis out of which electricity and magnetism arises, are pretensions too momentous to remain unchallenged if they lacked good evidence in their favor. Yet instead of awakening dissent among the critical hosts of science, these utterances of Professor Fitzgerald have not only been received as voicing the convictions of the scientific world but they are confirmed from time to time by the sometimes tacit and sometimes express assent of all who discourse upon the matters involved.

Prof. Oliver Lodge, one of the leading scientific men of England and an acknowledged authority upon the subject has recently published a work entitled "Modern Views of Electricity." In his preface he says:

"Few things in physical science appear to me more certain than that what has so long been called electricity is a form or rather a mode of manifestation of the ether."

He supposes the ether as a compound of two constituents corresponding to positive and negative electricity. Each of these constituents has affinities, cohesions, or entanglements with the various kinds of matter, which affinities, cohesions, or entanglements are greater or less according to the kind of matter involved, so that by the motions of certain sorts of matter under proper conditions the two constituents of the ether are torn apart or separated, or in the language of dynamics, strained. But at the same time these constituents also tend with unceasing persistence to reunite and saturate one another into a state of absolute neutrality. Separate, these constituents show an existence and an energy towards one another. United neither of them shows any existence at all nor any efficacy whatever. They are as though they did not exist.

It is of small moment to the present purpose whether or not this electrical theory is well grounded. In either case its very formulation supplies us with a suggestion as to how it is possible to think of consciousness as a product of nerve action.

Just as the ether is supposed as the substantial basis out of which in consequence of the motion of matter electricity and magnetism becomes manifest, so may we suppose an analogous (per-

haps the same) basis surrounding and permeating all things, and out of which in consequence of nerve action, consciousness becomes manifest.

Why may we not suppose this consciousness basis, (which suppose we name spirit,) to be the ultimate substance which being variously modified by energy manifests in one case the phenomena of mind, in another the phenomena of electricity, magnetism, etc., and then again in a third case that phenomenon, mass, or inertia, which is the essential attribute of matter?

As with the ether in the absence of any cause that separates it so that electricity and magnetism become manifest, so spirit may be supposed to be utterly without manifestation and neutral until nerve action modifies its condition, when like electricity in the one case, so here, consciousness becomes manifest.

Why may we not imagine spirit as composed of two consituents corresponding to feeling and volition which united saturate one another into neutrality, but which separated by nerve action manifest feeling that tends to pass into volition, or volition that tends to pass into feeling? This would be in accordance with the phenomena of reflex action which is supposed to be the elementary type of mentality.

This is in harmony with the views of the author of "The Soul of Man," for he, although for other reasons, also explains the origin of consciousness from tension. He says:

"Consciousness is an intensified state of feeling caused through tension. It lies between a want and its satisfaction. Satisfaction not being immediately attainable, feelings are no longer in a state of equilibrium, and it is this tension which concentrates and intensifies feeling into consciousness.

"It appears that consciousness never arises without a certain tension. Days spent in an idyllic life flow away almost unconsciously; there is little friction, there are no problems to be solved; there are no unsatisfied wants, or if there are any, they are quickly and easily attended to. There is no need of consciousness, there is not much tension to call it into play, so life passes dreamlike as a tale that is told. The more life is burdened with problems that demand a man's full care and deliberation, and the stronger are his attempts to solve the problems of his situation, the more intense will his consciousness be.

"It appears to me very doubtful whether conscious beings could exist in a world—if such a world were possible at all—where the struggle for existence was

unknown; for it is the struggle for existence that presents the first and most imperative problems to living and feeling beings."

Spirit or the elementary basis of consciousness considered as a quantity, would on this supposition remain the same, but the forms of its manifestations would change. There would be more or less straining of spirit and accordingly more or less manifestation of consciousness. Or to formulate it in one sentence, we would have to postulate *the conservation of spirit.*

Such a supposition or some similar supposition if tolerable would bring our ideas into some sort of accord with scientific customs of explanation, and would, extricate our minds from that state of utter stultification into which they are cast whenever they are confronted with the relations of body and mind.

FRANCIS C. RUSSELL.

ON CRIMINAL SUGGESTION.

A WIDELY known criminal trial has brought before thoughtful minds, on both sides of the water, this question, viz.: Whether a subject in a hypnotic condition possesses any free will, and whether in such a state, it is possible to transform him into a criminal or at least, for the time being into becoming an accomplice in crime! It is not the first time that this question has been agitated; indeed at the very beginning of Mesmerism, as it was then called, this idea was brought forward.

It was clearly formulated by Dr. Charpignon, whose own opinion nevertheless is, that it was "much easier to restore moral rectitude to a somnambulist who had fallen therefrom, than to pervert the integrity of character of a woman of high moral standing." In 1866 Dr. Liébeault, in his work on, "Sleep and Kindred States of Being," of which at that time there were but six copies sold, coincides entirely with this opinion. The passage is too noticeable, not to be quoted in its entirety. (P. 524.)

"We may postulate, as a first principle, that a subject during the state of magnetic sleep, is at the mercy of the hypnotiser. I have made experiments that have confirmed me in this opinion; I have many a time, removed the hats of such persons, searched their pockets, drawn off the rings from their fingers, untied their shoes, etc., ... without their having noticed the action at all, or having made the least resistance, the isolation into which I had thrown them, being the cause of this absence of all consciousness. . . . .

"How very grave, the possibilities, are which may ensue from this state of being, we may readily conceive! What I have advanced here, is the result of certain experiments which I made upon a young girl, who, while being very intelligent in her natural waking condition, became during hypnotic sleep the most cross-

grained and wilful person I had ever had to deal with. Nevertheless I always ended by mastering her will. I was able to excite in her mind the most criminal resolves; I roused her passions to a high degree, I was able to cause her to fall into a violent rage with a person, to fly out upon her with a knife in her hand; having displaced in her mind the sentiment of friendship, still armed with that instrument, I sent her to stab her best friend, whom I told her she saw in front of her; she obeyed, the knife burying itself in the wall opposite. I almost prevailed upon another young girl, who was however less under the influence, to kill her own mother, and though she wept, she actually prepared to do the deed.

"After all, it has been known for a fact, that a man, who, up to that moment, was of sound mind, hearing a voice continually repeating: 'Kill your wife. Kill your children'—has obeyed this command, incited thereto by an irresistible impulse; and shall the hypnotic subject already predisposed to hallucination, escape this same involuntary impulse? I am firmly convinced, after having made many other experiments, that a subject to whom is suggested the commission of any bad action, will carry out the crime after his awakening, by reason of what has now become in him a fixed idea. The most moral will become vitiated, the highest-minded perverted.

"If it has already been found possible to reform a woman of loose morals and bring her to abandon entirely her evil courses, why cannot the reverse be effected and by the same means? It would be in the power of the magnetiser to suggest to his subject, not only to become a tale-bearer, a calumniator, a thief, dissolute, etc., at some period subsequent to the magnetic sleep, but, he might use him, for example, as the instrument of his personal vengeance and the poor dreamer, unmindful of the primary incitement to the criminal action, would commit on another's account, instead of on his own, the evil deed, prompted and forced on thereto, by the irresistible suggestion and will, imposed upon him by another person. And when the crime shall have been consummated, where shall he find the medical jurist, who can hold up to Justice, the torch which is to throw the Light of Truth upon the act, and challenge the innocency of a man, who, up to the moment of the crime never exhibited the slightest sign of insanity, had shown every mark of a sound mind and yet, when convicted of the dreadful deed, states with every apparent sign of good faith, that he has committed it of his own accord? And who can tell whether such cases have not already taken place."

These momentous words passed unnoticed. At that time, the world did not believe in Hypnotism. M. M. Richot and Charcot restored it to a place of honor. The School of the Salpêtrière made its advent, and saw in Hypnotism a pathological condition. Simultaneously with this school of thought, there arose the rival one at Nancy, which following its leader, Dr. Liébeault, saw in hypno-

tism, only a psychological phenomenon. One of the masters in this school, M. Liégeois, Professor of the Faculty of Law, in 1884, in his pamphlet on "Hypnotic Suggestion, in relation to Civil and Criminal Law" also propounded to the public this idea of criminal suggestion.

M. Liégeois, like M. Liébeault, did not confine himself merely to theory. He went on to demonstrate and prove his thesis by conclusive experiments.

Strange to say, the Salpêtrière took issue on this point, adopting and defending the opposite opinion.

I would now ask permission to raise my own voice in this debate, and I am the more emboldened so to do, inasmuch as my own personal observations and the study which I have brought to bear on this matter, have caused me to pass, so to speak, from one rival camp to the other. The thesis upheld by the School at Nancy, while it found in me at first an adherent, finds me to-day an adversary.

Just a word about myself to the readers of *The Monist*.

I have always been a believer in Magnetism. At the outset, and until towards 1875, merely on the faith of books, later, because I had been present at one or two more or less public exhibitions. And it appears singular enough, that though thus imperfectly trained in the knowledge of it, I should have explained, as I did in 1869, the ecstasies and the stigmata of the celebrated Louise Lateau, as coming simply from auto-suggestion; and that even to-day, there should be neither jot nor tittle to subtract from what I then wrote, regarding it.

I only began practising magnetism at the commencement of 1886. I was returning from a visit to the Salpêtrière whither I had been attracted by my doubts on this very transference of thought and from which I returned with my doubts intensified. I have already recounted, in a series of articles, that appeared in less than a year in the *Revue Philosophique* ("Upon Memory in Hypnotic Subjects"; "On the influence of Imitation and Education in Somnambulism, as exhibited in the so-called hypnotic sleep"; etc.) my experiences, observations, and inductions. Not to speak of my contribu-

tions to the Magazines, and notably to the *Revue de l'Hypnotisme*, I introduced hypnotism into the science course of the Royal Academy of Belgium by means of two works. One, on the "Origin," the other on the "Extent of the Curative Effects of Hypnotism" (1887–1890). Besides many other polemical writings in favor of the liberty of holding public exhibitions ("Letters to M. Chiriar, Representative," 1888. "Magnetisers and Physicians," 1890). I related at length what M. Charcot and his pupils had shown me in Paris, as well as what M. M. Liébeault, Bernheim, and Liégeois, had let me witness at Nancy ("A Visit to the Salpêtrière," 1886—"A Visit to the School at Nancy," 1889).

At the time then, that I took upon myself to hypnotise, I firmly believed that the subject became the property of the magnetiser; passing over, as of no importance, the manifest resistances that I met with at every point and in every form on the part of subjects, who, in all other respects I found perfectly adapted to such experiments; as for instance, one who permitted his tongue to be pierced with a large darning needle by my sceptical colleague, Dr. Masius; and to be burned several times, both with a red hot iron and by thermocautery, by my colleague, the surgeon Von Winiwarter, both these experiments having reference to the curative effects of hypnotism. Thus, adhering entirely to the belief of M. M. Liébeault and Beaunis, at the close of 1886 ("A Visit to the Salpêtrière") I wrote these words:

"M. Beaunis's statement is perfectly exact. The somnambulist, in the hands of the hypnotiser, is less than the *corpse*, which the perfect disciple of Loyola should resemble. He is a slave, with no will other than that of his ruler, and in order to fulfil the commands laid upon him, he will push precaution, prudence, cunning, dissimulation and falsehood, to their extremest limits. He will open and shut doors noiselessly, walk in his stockings; will listen and watch, with what keen sight, what acute hearing! He will remember anything and everything you want him to, will forget all you desire him to forget. He will, in good faith, accuse a perfectly innocent man before a Court of Justice. He will have seen everything, that in reality he has never seen, if you command him so to do; he will have heard, what he never could have heard and done everything that he never could have done. He will swear by his Household Gods, that he has acted throughout, of his own free will, without any external pressure, will invent motives if need be, and will completely protect and cover his hypnotiser.

"Theoretically, such a power is the most dangerous thing on the face of the earth! I believe though, that practically, with the exception of what might relate to physical or moral abuses or tampering with testamentary wills, there is actually little or no danger. It appears to me the fear of this has been unduly exaggerated."

In a foot-note of mine, while mentioning with highest praise the memoir of M. Liégeois, I added further: "I do not express any alarm that I cannot show a good reason for." Among other reasons, I pondered on the difficulty, say rather, the impossibility there is, of obtaining from the subject an absolute abnegation of will-power, whilst at the same time we allow him to retain the necessary free will to cope with any unforeseen accidents which might occur to compromise the fulfilment of the thought and action suggested.

Two or three months later I should not have expressed myself thus; and hence the remarks that accompany the experiments related in my articles on Hypnotic Consciousness, *Revue Philosophique*, Feb., March, 1887, experiments which took place about a year previous to this (see the note to the contributed articles, Feb. 1887, p. 119). It may there be noticed that my assent is tempered by certain marked reservations. I was even then opposing practice to theory, i. e. I narrowed down these apprehensions of danger to two legitimate causes of alarm, viz. attempts against morals, and tampering with testamentary wills.

Upon these two points I am still of the same opinion, with this exception, that what I then feared probable, I now regard as exceedingly problematic. I mean to say, that a villain who was contemplating the perpetration of a crime, would not easily find an accomplice in a subject of good moral standing. And in any case, I still think as I thought then, that such an accomplice would not only be inapt, but compromising. It is this latter point, I wish to demonstrate to you, by the following criticism upon an experiment never before published.

At the end of May, of last year, I was passing through Nancy with some friends, among whom was Dr. L. Frédéricq, Professor of Physiology at the University of Liège. We were spending the evening at M. Beaunis's house together with M. M. Liébeault, Bernheim, and Liégeois. Naturally this question of Criminal Suggestion

came upon the *tapis* and was discussed in all its phases, without advancing one step towards its solution. We made an engagement to meet at the hospital on the following day, where M. Bernheim invited me to be present at an experiment, which he maintained would convince me. I will relate at length the occurrence, for in such cases, the slightest details may acquire very great importance.

M. Bernheim threw into the magnetic sleep a great, tall fellow, quite easily influenced, and whose illness did not prevent him from walking about in the ward.

"Presently, when you have waked up, you will go and steal an orange from the patient that you see over there, in that bed opposite. Remember that what you are going to do is very wrong; it is strictly forbidden by honesty and by the law, and you will run the risk of being punished." The man is waked. He appears to be collecting his thoughts. He rubs his forehead, he is visibly meditating something.

"What is the matter with you? What are you thinking about?" I ask him.

"Nothing."

"You seem preoccupied."

"Well, yes, I have to do something."

"What?"

"I am not obliged to render you an account of my actions."

"Ah! one would almost say you were meditating some mischief, where are you going?"

"That's no business of yours."

"Oh! very well then, I shall watch you and follow you."

I follow him; he walks towards his companion's bed, glances at the orange, then leaning up against the window, he calls me to admire some cherries growing on a potted plant. He keeps quite still. Why? Simply because I had told him that I intended to watch him, *otherwise my presence would not have troubled him in the least.* During this time, M. Bernheim had acquainted the other patient with the intended proceeding, he nevertheless having heard the whole transaction. "I do not think he will do it," said he to the Doctor, "he is one of my mates and he wouldn't steal from me."

I walk away and join the group of persons present. I say to M. Beaunis, that this experiment will prove nothing, he answers me by a gesture of surprise. The subject, as soon as he sees me go away and *thinks that I am not watching him any more*, stretches out his hand, seizes the orange that is behind his mate's pillow, *the latter meanwhile looking full at him.* A score for M. Bernheim, but one also for M. Delbœuf! I should need twenty pages at least of commentary on this experiment. But I shall only allow myself to point out the essential points.

This hypnotised subject then, or to speak more correctly, this man to whom a thought has been suggested, after I had warned him that I was watching him, and from whom I never took my eye, goes with the unerringness, so to speak, "of the falling stone," to carry out the suggested action, not however without a certain distrust of me, and this only, because he had been forewarned. And moreover in his dim consciousness, it is I alone, whom he is watching in that clumsy fashion, in order to seize upon some momentary forgetfulness on my part. He has never noticed at all, that his mate is intently watching him and following his every movement with open eyes; so he steals the orange from under his very nose! Let us not forget that it was M. Bernheim the house physician, who suggested to him to take the orange. But M. Frédéricq himself would equally well have fulfilled that command, even preceded as it was by the little homily, recorded above. Why should he have disobliged M. Bernheim? But indeed, the logic of my opponents is very weak. If, say they, a somnambulist resists criminal suggestion, it is because he is not a susceptible subject, or, that the experiment has been ill conducted, or, that the suggestion has not been strong enough. At that rate, it is useless to continue experimenting, if failure is always to be explained away. On my side, I might with equal reason, argue, that they had been dealing with some licentious mind, as yet all unknowing its inner self, or with a born criminal or a latent thief; and though I object to this kind of argument, it would often prove to be more legitimate reasoning than theirs. Who among us is absolutely virtuous? How many actions which the law calls criminal have we committed, or might we com-

mit, under the pressure of circumstances, without a shadow of remorse? But let us further examine this experiment.

Our subject then put the orange in his trousers' pocket which stuck out very noticeably. This man might be a criminal, but he was not a dissembler. Looking him straight in the face I said: "What have you been doing?"

"Nothing, I have just done my errand."

"You have stolen!"

"What nonsense!"

"What have you got in your pocket?"

"Nothing" (notice the absurdity of this reply).

"What do you mean?"

"Nothing!"

"What do you call that?"

"Why! it's an orange! it's a very fine orange! *Ma foi!* I can't imagine how it came there!"

M. Bernheim intervenes: "You took it from a fellow-patient, from a comrade! That was very wrong."

"Yes, that's so, but I wanted it. Look! did you ever see such a fine orange? I took a fancy to it and I determined to have it. Besides, *he hadn't seen it* (!) It's not stealing when it isn't missed."

Then I asked: "What is that you said?"

"Why, yes, it is not stealing to take what nobody misses," answers he, with a scarce perceptible cunning and significant wink.

A few minutes later, after we had ceased noticing him, he came up to M. Frédéricq of his own accord laughingly told him that he was in the habit of abstracting tobacco from his companions on this same ground, that if they never missed it, it was not stealing. "It is all in fun, you know!"

I conclude therefore, that this subject had in him latent tendencies to theft, or if you prefer it, to pilfering. And dare any of us, honestly confess to himself that we have not, deep down in ourselves, the germs of any such vices? Who among the most upright of us, does not consider himself perfectly entitled to defraud the government, or to get the better of a Railway Company, or quietly to appropriate an object which he may casually find?

M. Liégeois will very likely say to me: "We will grant that this experiment has not fulfilled the desired requirements; the subject has not very high moral qualities, and he juggled a little. But here now, are some experiments absolutely unimpeachable." Thereupon M. Liégeois relates the histories of Miss E . . ., of N . . ., of Mme. G . . ., and of Mme. C . . . Here are the facts as collated by him in the Gouffe trial.

First narrative. M. Liégeois believed that he had produced in Miss E . . . such absolute automatism, so complete an annihilation of moral sense and of all liberty of action, that he caused her, without moving a muscle, to place the muzzle of a revolver close to her mother and fire upon her. The youthful criminal appeared completely awake and far calmer than were the witnesses of this scene. (Take notice of this.) Her mother, immediately reproaching her and telling her that she might have killed her, Miss E . . . answers smiling, with a great deal of common sense: "I have not killed you, since you are speaking to me now."—"Is any one likely to believe that this is merely pretence and acting," adds M. Liégeois, "that a daughter will amuse herself by firing at her mother with a revolver, *which she does not know is not loaded,* simply to deceive the public?"

Well, shall I say it? The hypothesis of simulation, the simulation which is practised in the hypnotic state appears to me to be the only plausible explanation. The calm, smiling attitude of Miss E . . . is an unanswerable proof of this. I have no doubt that if in a dream she had seen herself firing at her mother, she would have suffered as in a terrible night-mare.

Lately, it was in the beginning of January, I dreamed I was present at a sale of paintings. Among others exposed for sale, there was a long picture, nineteen or twenty feet high and less than three feet wide, representing the assumption of some saint. Hardly had the auctioneer mentioned the price, 6,000 francs, than I made a sign of assent. It is knocked down to me. I start for home with my purchase, but on the way I am seized with remorse. Where shall I hang the religious picture? And even if I find a place for it on the staircase what will it look like in my house, with its old black frame and its extraordinary dimensions? And what a price to have

paid, at such a moment when the house bills are pouring in! In the midst of these reflections, I woke up, my heart was beating tumultuously and during the remainder of the night I continued under the most disagreeable impressions. In spite of my knowing that I was awake and reasoning with myself, congratulating myself that it was nothing but a dream, the enormity of my absurd action weighed upon my mind and I kept continually dreading the reproaches of my family, when they should learn the stupid bargain I had made. How widely different is this mental distress from the placid, smiling condition of Miss E . . . and how naturally one is brought to suppose that during the hypnotic state the subject is not even under the sway of the ordinary illusions of dreamland.

M. Liégeois affirms that Miss E . . . *was not aware that the pistol was not loaded.* I do not believe it. Upon what grounds are we to infer that a somnambulist is an imbecile? You and I, and everybody would easily surmise that M. Liégeois's revolver was not loaded! Then why should not Miss E . . . surmise the same? Is it not for the very reason that he handed it to her, to fire at her mother, that she would opine as much? Might she not have gathered this from the attitude of the spectators, full of expectancy unmixed by any apprehension? and might she not have wished to astonish them by her docility and *sang-froid?* All sorts of suppositions are both rational and possible. Besides all this, somnambulists who are absorbed in the work in hand, generally speaking, show a quicker and surer perspicuity; their sensibilities are finer, their quickness, their memory, overstep the ordinary limits as exhibited in their normal state. Do we not hear of scholars, who in the hypnotic sleep, learn their lessons in a very short time and write their essays admirably? I have recorded in the *Revue Philosophique*, August, 1886, some facts about a subject, upon whom I experimented before one of my classes.

"The experiment I am about to give an account of might serve very well as the explanation of many a miracle. B.* is in the hypnotic sleep. We wish to give him some peculiar order, which he shall execute, after he is awake, at a special signal. The signal is to be a knock given by me on the desk; the action, to carry a

*A lad of about 15, very bright. Has been one of Donato's subjects. Very susceptible and having been hypnotised in a great many public séances.

glass of water (a carafe of water and glass being on a chair) to the student Eucher. He does not know any of the fifteen students present, nor has he yet heard their names. The pupils take their places, without any special order, some standing, some sitting. B. is awakened. We chat a little. I give the signal. B. rises, fills a glass, and *without the slightest sign of hesitation*, carries it to the student mentioned before, who was sitting on one of the back benches, beside a fellow student. We looked at each other with stupefaction. The intention of the experiment had been, to see how he would obey an obscure command. There were in my audience, certain persons, with leanings toward belief in second-sight. This result seemed to overthrow all my convictions. I again throw him into the sleep, and I command him to carry a glass of water to the student Gérard; we are all standing, awaiting with impatient curiosity what will take place. B. fills the glass and this time sends a questioning look over all the spectators, presents the glass first to one, then to another, and finally I had to point out the student Gérard, to whom he brought the water and made him drink it. I again put him to sleep, and asked him to whom he carried the first glass of water. To M. Eucher—Did you know him? No—How did you recognise him? —By his attitude, he looked as if he wanted to hide away."

And this is how the mystery was solved. We had unconsciously prepared the scene, and it was this preparation which betrayed us. But it is none the less a remarkable example of the perspicuity shown by somnambulists. This goes to prove that hypnosis, instead of dulling the understanding, sharpens it.

The second of M. Liégeois's experiments appears to me quite as open to suspicion, and exactly for the same reasons.

"I offered N. a white powder, of the nature of which he is ignorant; I said to him: 'Pay great attention to what I am about to tell you. This paper contains arsenic. You will go presently to such a street to your Aunt's Mme. M. *who is here now*. You will take a glass of water, carefully dissolve the arsenic in it and then you will offer it to your Aunt.' 'Yes Sir'—That evening I received the following note from Mme. M.: 'Mme. M. begs leave to inform M. Liégeois that the experiment succeeded perfectly. Her nephew offered her the poison.' The criminal remembered nothing about it, and it was very difficult to persuade him that he had indeed wished to poison an Aunt for whom he had a deep affection. The automatism had been complete."

I cannot help seeing here an erroneous line of reasoning. They conclude, from the absence of all remembrance, that the somnambulist is an automaton, and from this they go on to deduce that he swallows everything that is said to him. But, since he listens to the voice of his hypnotiser; since he knows that to accomplish the behest, he must do things that have not been expressly pointed out,

though they are understood in the execution of the deed :—such as to get the water from a well or pump—why do they not allow that he is able also to reflect upon the nature of the deed which he is told to do? Why is it that N . . ., who is aware that he is being used in an experiment, cannot say to himself during his hypnotic state, that this is only an experiment, that the paper does not contain arsenic, that M. Liégeois never would really want him to poison his aunt, *his aunt who is present at the time, and who hears every word?*

I repeat again, a hypnotic subject is not an idiot—quite the reverse. All the precaution which M. Liégeois takes to render the experiments reliabe, and conclusive, turns against the proof desired. Can you imagine the poisoner, Dr. Castaing, saying to his servant before Hypolite Ballet, whom he intended to kill, "Here is some poisoned wine, you will presently give it to the sick man, whom you see over there in that bed." If he had done this, he would not have been condemned to lose his head, but they would simply have shut him up in a lunatic asylum. And, as far as that goes, the servant might easily, without any suspicion being attached to the action, have given the poison to Hypolite Ballet, and the latter have drunk it.

But we have dallied long enough over these absurd suppositions. Let us pass on now to the third narrative :

M. Liégeois caused Mme. G. . . to fire at M. P. . ., an ex-magistrate. In order to show clearly that the revolver was loaded, M. Liégeois fired a shot in the garden and came in, showing a piece of card-board, through which the ball had passed. "With absolute unconsciousness and perfect docility Mme. G. . . advances to M. P. . . and fires. Being questioned on the spot by the Chief Magistrate (who was present at the *séance*) she avows the crime with entire indifference. She has killed M. P. . . *because he was not pleasing to her* (!) They can arrest her ; she knows quite well what awaits her. If they take away her life, she will pass into the other world like her victim, whom she sees stretched out, and bathed in his own blood. They ask her whether it was not I who suggested to her the idea of the murder. She denies it, and says she did it spontaneously ; that she alone is guilty ; she is resigned to her fate, she will accept without complaint the consequences of her deed."

The more I meditate to-day upon these experiments, the less they appear to me to prove what it is desired they should. This perfect tranquillity of Mme. G. . ., her generosity in not inculpating M. Liégeois; her resignation to the fate that awaits her, establish entirely the fact that she is present in mind and knowledge of events; and just because of this very attitude, that she possesses her full presence of mind. She never dreamed for an instant that she would really kill M. P . . . . She plays her part conscientiously, she faithfully recites a lesson which she has learned by heart and with which she intermingles side play of her own, childish tricks, as for instance, saying that *her victim had displeased her.* Let us recall to mind the patient who stole an orange, *because it was a fine one.* That Mme. G . . . sees M. P . . . bathed in his own blood, is more than doubtful. I can produce numberless proofs of facts that go to prove that fictitious somnambulists are not dupes of the illusions suggested to them; their calmness proves this. That it is possible to make them commit an action dangerous to themselves or to others, I am not prepared to deny. I will explain myself later upon this point. But from this state, to that of criminal participation, there is an incalculable distance.

That the somnambulist repeats a lesson that he has learned, is shown forth by M. Liégeois's fourth narrative.

"Mme. C . . . was to give some arsenic in a liquid to M. D . . . who was thirsty. But M. D . . . asked a question that I had not foreseen; he asked what was in the glass. With a frankness that precluded all idea of simulation Mme. C . . . answered 'Arsenic.'

"I was then obliged to amend my suggestion, and I said: 'If you are asked what is in the glass, say it is sweetened water.'

"Mme. C . . . answered the question the second time, 'Sweetened water.'

"Very courageously M. D . . . swallowed the supposed poison. Questioned by the Chief Magistrate Mme. C. remembers nothing; she had seen nothing, done nothing, given no drink to any one. She does not know what they are talking about."

Again all this is proof to me, that Mme. C. feels that she is being told to perform an innocent action. It would have been interesting to have awakened her in the middle of the act, to see whether she would have remembered her thoughts, just at the moment when she was giving the drink to M. D . . . I am not sure but that she would

have answered like Miss E . . . that she had no doubt the poison was imaginary, and the scene prearranged.

We have seen M. D . . . ask an unforeseen question, which upset the carrying out of the crime. We have witnessed M. Bernheim's patient steal an orange under the nose of its proprietor, who was looking at him. Admitting, therefore, that all had been foreseen, that M. Liégeois had warned Mme. C . . . of all the possible questions that might be put to her; that M. Bernheim had strongly recommended his subject to commit his theft secretly, and that every possible detail had been perfectly carried out—should we have even then a faithful transcript of a crime? Can we have the unerring certitude from these occurrences, that a subject in the hypnotic sleep, a bona fide somnambulist will allow himself to be used as an accomplice by a veritable criminal?

* * *

In the preceding paragraphs, I carefully analysed the slightest details invalidating experiments, in which the hypnotic subject acts the part of a criminal, in a fictitious crime. I was able to show, that in all these tests, there had been certain suspicious traits suggesting doubt as to the complete illusion of the actor therein, and I finally added: Supposing that everything had worked smoothly, i. e. that everything had been foreseen and that the subject had not been tripped up anywhere, are we authorised in maintaining that a subject thus far unimpeachable as regards a fictitious crime, would accomplish this same deed in reality? I answer, No.

In order to justify this denial, it will be necessary for us to enter into the Psychology of Hypnosis.

A person in the hypnotic sleep, as well as in the natural sleep, is not so absolutely withdrawn from the real world about him as is generally supposed. The hypnotic subject even less so, than the sleeper, for the former remains in intelligent communication with his magnetiser. If the latter tells him to take a book from a table upon which is an inkstand, some boxes, a statuette, he will pick up the book and not any of the other objects. If he is enjoined to walk straight before him in a room encumbered with chairs he will

manage to avoid them, and even if the illusion is pushed further he may knock up against them, but the action will be done quite cautiously. And this is why, in public séances, he never hurts himself, in spite of the wildness and apparent excitement of his movements. This is also the reason, that in experiments intended to demonstrate this absolute automatism, the preparation for the proposed crime, the attitude of the spectators, while the subject is carrying out his part, the integrity of the person who is suggesting the action, the calmness of the intended victim; all these things, render the suggestion less illusive than even an ordinary dream would be.

M. Liégeois asks this question at the conclusion of his first narrative: "Where is the spectator, who could believe that this scene was only a melodrama with clever acting; and that a daughter for her amusement, and solely to deceive an audience, would fire an unloaded revolver at her mother?" To this I answer: And why should she not play her part in this melodrama, when she sees M. Liégeois devise it, her mother lend her co-operation, and the audience watch it with curiosity and interest?

Here again we find the same fallacy in the argument: Because a subject does not reveal what is going on within himself, and only puts into visible speech what is suggested to him, it is taken for granted that he is going through a mental process identical with that of his magnetiser. But allow me to ask in my turn: Will it be easily credited, that a daughter, would, deliberately and without a trace of feeling, shoot at her mother, unless, she fully believed the action would have no serious consequences, and that the person who had suggested this impious deed, was only requiring her to act a part?

Hypnotic subjects do not take long to realise that they are being used as tests in experiments. Some are always gracious in responding to them, many end by refusing to lend themselves to be used in such fashion, especially in public séances. All these details go far to prove that in hypnosis, the subjects retain, at least a partial independence.

If a sleeper, who dreamed he was murdering his mother, should behold her terrified, beseeching, invoking the pity of her son, calling for help to the horrified spectators, he would feel that he was in-

duced to commit this deed by some sort of motive, which, absurd or unlikely though it might be, would still be the controlling power; in a word, the dream would be in reality a kind of incoherent and unreal drama, though composed of very real elements, in which horror would play a very present part. But if he should see his ostensible victim smiling and conversing with him amidst a company animated only by a sentiment of curiosity, he might well suspect, even in his sleep, that what he sees and what he is doing, is a pure delusion. And this is exactly what he would say to himself, should it come into his head to fire upon a *magistrate*, and for the reason *that his looks displeased him.*

These prearranged scenes fail in verisimilitude and no more deceive the actors in them, than they do the spectators or the author.

To this you may object: But, if the pistol had been loaded, Miss E. would have shot her mother! This rests upon the supposition that the mother and the spectators, still believed it to be unloaded, otherwise, their terror alone, would have been quite sufficient to call back the subject to the reality. And even with this assumption, this murder-test would have borne a greater resemblance to a simple homicide from imprudence. By this I mean to say, that so far as the spectators, the victim, and the assassin were concerned, the act would not have been changed in its character, simply because the magnetiser, had by mistake, given a loaded instead of an unloaded pistol to the subject. I need hardly remark that a real crime would never be perpetrated in this manner.

Thoroughly convinced though I was, of the impossibility of making experiments that would entirely fathom this question, circumstances nevertheless, allowed me once more to make a test which is well adapted to show that it is not as easy as some may think, to transform an hypnotic subject into a murderous automaton.

J. . . . is that excellent somnambulist to whom my experiments have given a certain notoriety. It is she together with her sister, whom I made use of in my studies on "Memory in Hypnosis," on "Imitation," and "Hypnotic Consciousness." She it is, who three several times allowed herself to be experimented upon by blistering on corresponding parts of the body; and notably in one case where

in accordance with suggestion no inflammation took place.* She is tall, robust, intelligent, industrious, healthy. She is now married and has had a child. The *accouchement* took place in the hypnotic sleep. The case being in the hands of M. Fraipont, Professor of Obstetrics in the University of Liège; and never was the power of hypnotism more remarkably exhibited.† In the case of this patient there remained no trace of remembrance whatever, after awakening.

I have gone into these details merely to show the reader that no better subject could have been found for my purpose. I have in another place (see *Revue Philosophique*, article on "Hypnotic Consciousness") pointed out certain traits in her case, which at my *début*, were strongly calculated to make me a believer in the absolute servility of the hypnotic subject; traits which I shall subsequently recall to your attention and comment upon.

To judge more fairly of the value of the experiment, I must further state, that J. is both resolute and courageous. During several summers she remained in the country in the environs of Seraing in attendance upon my wife who was in ill-health, and in whose room she slept. After the summer vacation it often happened that she spent the whole night alone with her. At the head of the bed hung a six-barrelled revolver, loaded; a precaution that we had taken on account of the well-known strikes which took place in 1886, amongst the workmen of the numerous factories in our neighborhood.

In the summer of 1887 I happened to be absent. A man came one night, prowling round the garden and fumbling at the lock of the door, which he even tried to force. The barking of the dogs wakened J., she opened the window, perceived the man, took the revolver and went down into the hall watching for the moment in which to fire at the nocturnal visitor. The man hearing the noise slipped away with celerity. And the same year that this occurrence took place, J. slept on the first floor with her loaded revolver hanging on a nail beside her bed.

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* See my pamphlet on *The Origin of Curative Effects in Hypnotism.*

† See *Revue de L'Hypnotisme.* April, 1891.

The 24th Feb. 1888, without communicating my intentions to anybody except to my daughter, and that only at the very moment of beginning the experiment, I discharged the revolver. It was six o'clock in the evening. A young lady, (herself an hypnotic subject,) and my daughter, were seated at a table, cutting out articles from a newspaper, which they afterwards tied up in bundles. I called J. and at the moment she opened the door, I hypnotised her by a motion. I said to her in an agitated tone—"Here are some thieves, who are carrying off papers."—J. came quickly forward and turning towards me said: "No sir, they are playing with them—Why sure enough they are taking them." Then she walked resolutely up to them and tore the papers out of their hands, put them on the table in front of her and in an imperious tone said: "Don't you touch them any more."

I—"You are never going to let those knaves remain in the house—run and fetch the revolver" (it was in the adjoining room). J. ran without hesitation. She returned holding the weapon in her hand and stood on the threshold. "Fire," cried I.

"Sir, we must not kill them."

"Thieves? Why certainly!"

"No sir! I will not kill them."

"You must."

"I won't do it." And she walked backwards still holding the revolver, I following her and energetically reiterating my command. "I won't. I won't do it. I will not murder." She then placed the revolver on the floor but *cautiously*. She continued to go backwards, I, meanwhile insisting and following her. "I will not do it."—Having come to a dead stand in the corner of the room, she repulsed me violently and I thought it prudent to awaken her, upon which she came to herself smiling in her usual pleasant manner. She remembered, however, nothing whatever, although at the sight of the revolver lying on the floor, she seemed to have a kind of vague recollection. She did not seem at all discomposed in manner. If this scene had taken place in a dream, she would certainly have exhibited more excitement.

This is what we may term conclusive evidence, that is to say if

ever negative evidence can be called so. Let us comment now upon these facts.

It will be noticed that J. is not the dupe of the hallucination to which she has been subjected. She does not take either of the young ladies for thieves, nor the newspapers for valuable papers. Her first answer is very significant—"No sir, they are playing with them." Besides which her expression, her attitude, the manner in which she looked at the two reputed thieves, and tore the newspapers out of their hands, had something so keenly observant, so prepared, so theatrical, that both my witnesses and myself could not possibly believe her actions ingenuous. I have often questioned her about the illusions that I suggested to her. I asked her for example, if, when I appeared to her under another aspect, for instance under the appearance of a young man, with clustering locks and a black beard, she ever perceived anything of my real resemblance. She invariably answered, that she saw my actual person, as it were in a cloud, behind the figure which I had called up before her mental vision. It is very probable that she recognised my daughter and her friend in the persons whom I pointed out as the robbers. I might have assured myself of this by causing her to recall her thoughts at the time. I am aware that the opponents of this opinion challenge, and not unreasonably, tests made in this manner because they have doubts about the suggestion.

If then the facts were such as are related, J. was playing a rôle not perhaps strictly in accordance with the rules of ordinary acting, knowing that she was reciting a part, but feeling nevertheless that she had a certain part to play and must enter into the spirit of it.

It is incontrovertible that the hypnotic subject really does play his part in precisely this fashion. When, for example, you extend his arm and defy him to put it down he seems to make an effort to lower it, but in reality he does not bring the required muscles into play at all. If you bid him keep his hand open, he never dreams of using the flexor muscles. Again, if the spectators try to change the position of either hand or arm, they meet with energetic resistance.

You will ask me how it was that J. did not carry out her acting all through? Why, after she had gone for the revolver with such deliberation, she did not fire it? It was because, the action being so rapid in its development, she had no time for reflection; she must have thought and she actually did believe, that the revolver was loaded as it always was. This is proved by the precaution with which she handled it and put it on the floor. It is evident that she thought it was a dangerous game. If I had known how the affair would terminate, I would have taken the pistol and told her that I would fire myself, in order to see what her thought and action would have been. But notwithstanding all this, supposing she had fired could we have concluded from this, that she really had latent murderous tendencies? We could not have drawn any legitimate conclusions even yet. For if, as we have just stated J. was not entirely withdrawn from her actual surroundings, she might naturally suppose that I was only joking, and that I should never make her fire on my own child, and on this account she need not feel any anxiety in fulfilling the order that I had given her.

The problem is a serious one. It is also a psychological problem. I have already partially disclosed the solution which I myself am led to give to it, and I can best translate my thoughts by these words and in the following formula: Persons in hypnosis will only execute acts similar to those they would naturally perform in dreams. I have asked a number of persons, among others, those connected with the law, whether they had ever dreamt they committed murders or robberies, and up to the present time all have answered in the negative. And yet, lawyers interrogate criminals, and it would be quite within the realm of possibility through one of those duplications of personality which I pointed out in my work on "Sleep and Dreams,"* that they should take up for an instant the rôle of an assassin. This is not an impossible supposition. Does it ever happen that the novelist or the actor, in portraying or impersonating an infamous character, the creation of his imagination, does so identify himself for the nonce, with his own invention, that even in sleep,

* *Sleep and Dreams*, p. 24 et seqq. (Paris: Félix Alcan).

for a brief space, he incorporates himself, so to speak, into the fictitious personage he has evoked. There are some very curious investigations to make on this subject. But even if any positive facts could be gathered from this, we should still be left in doubt, as to whether by post-hypnotic suggestion the subject would continue to carry out the same rôle.

Doubtless, an anatomist may dream that he is dissecting a body, but could we produce an hypnotic condition such as to make him use the knife as freely upon a living body? Can I make a butcher believe that a child is a sheep? I consider the thing to be perfectly feasible, yet my thesis is not at all weakened by this concession. We will take it for granted that, animated by evil designs you proceed to hypnotise beforehand, the anatomist and the butcher, and then bring them at a given moment to the victim! And let us further imagine that the combination succeeds perfectly. How will you manage to veil in deepest secrecy all your previous manœuvres and cast a semblance of likelihood over the culpability of your accomplices?

Will not the old adage, *Cui bono*, be quoted against you? In order to insure perfect impunity, you would have to overcome such an accumulation of material *impedimenta*, the lightest of which would suffice to dissipate all apprehensions in the minds of those in whom chimerical fears have not entirely obliterated their common sense. It is therefore evident that in so far as we know now, from experiments intended to test this theory and these possibilities of Criminal Suggestion, no positive results can be obtained. These criminal actions, so appositely named—Laboratory Crimes—bear no resemblance to actual ones.

If this debate is ever to be closed it can only be before a Criminal Court when a Troppman, a Pranzini, or an Eyraud, shall have been the operator, and it shall have been clearly shown, what interest the assassin had in making use of a so-called, unconscious and automatic accomplice. Then only, shall we be able to appreciate to what degree hypnotism may become a dangerous enemy to society at large. And even then, we shall have to remind

ourselves that all our medicines are poisons and that they have the power of destroying even more surely, than that of healing.

Thus the problem is still unsolved.

Here is a story told me by Dr. Liébault. He, or perhaps it was M. Bernheim, or both together, hypnotised a workman and told him to steal a couple of little plaster figures, that were used as ornaments on the mantel-piece in a house where he was working. He did so. The affair had been forgotten for some time because the suggestion had not been carried out on the spot. About three months after the occurrence, this same workman was arrested for stealing a pair of trousers from the front of a shop. Upon which the previous hypnotic suggestion was remembered.

My opinion is that the workman—and how many there are of the same calibre—had a very slight regard for *meum and tuum*. This reminds us of that hospital patient, whom we saw pilfering the tobacco from his comrades, and I do not think it was at all necessary to have thrown the workman into the hypnotic sleep in order to make him steal the statuettes. But from another point of view, this experiment, which did not prove anything, might give rise to party arguments from those who deem it desirable to maintain that it was the initiatory suggestion that first gave this man the taste for stealing.

To sum up in a few words this portion of my investigation; the result of my experiments and of my analyses is this: that the experiments of my opponents prove nothing.

For the present I shall confine myself to this purely negative conclusion.

But there are other grounds besides experiments on which we may examine this question. We can do so by careful observation and minute analysis of the actions of hypnotised persons.

I have said before that the degree of morality observable in the dreams of the subject, gives the measure of what may be expected from him during hypnosis.

According to my opinion, hypnotism is less powerful in inciting to actions of grave moral import, than the corrupting influence of word or example, the love of gold, or the excitement of the passions.

All truly scientific experiments have brought into prominence the analogy between physiological and incited dreams, and to-day we may say that this is the doctrine of the future. Thus if an hypnotic subject admits without opposition that he is made of sugar, or of glass, that he feels he is melting in the rain, or being broken to atoms by the awkwardness of the bystanders; if he thinks he is a lamp, or allows himself to be trundled along like a wheelbarrow; if such a subject, I repeat, refuses to steal a purse, or to receive an embrace, the conclusion forces itself upon one that the hypnotic subject has more power over himself than some persons would wish us to believe; in spite of his docility, there are some things he absolutely refuses to do.

If then, reasoning by analogy has ever been legitimate, it is surely so in this case, when the inference can be drawn that the man who refuses to give a blow will refuse to use a knife; and that the woman who refuses to give a token of affection will certainly refuse to allow of serious tampering with morals.

Let us then pay close attention to what observation may teach us.

I shall hope to be able to demonstrate by actual facts, that persons in an hypnotic condition, preserve at least a sufficient portion of their intelligence, their reason, together with freedom of action, to prevent them from committing deeds that neither their conscience nor their habits approve of.

J. Delbœuf.

LITERARY CORRESPONDENCE

I.

FRANCE.

WHEN, some ten years ago, M. de Roberty published in the *Review of Positive Philosophy* a series of articles, under the title of the "New and the Old Philosophy," I was much impressed by the work. The conception of the three types; the idealistic, the materialistic, and the sensualistic, under which nomenclature he ranged the various philosophic systems, seemed to bring order into the history of philosophy. He also proceeded to treat, after the same manner and in a very happy way, the "law of the three states" of Auguste Comte, by this means rectifying and justifying the latter. The law of the three states, wrote M. de Roberty, corresponds with the present state of philosophy, which is again explained by science, so that to whatever measure knowledge may attain to, it will be equalled by philosophy, which borrows its types and its characteristics from the sequence of facts, at the point where it leaves the sphere of explanatory hypotheses.

Since then M. DE ROBERTY has completed by a new study, his first work on this subject. In the "Unknown" he has laid his finger on one of the weak points of modern positivism; perhaps by dint of searching into details, he has shown himself a little too severe on Comte in the book about which I am going to speak to-day, *The Philosophy of the Century* (*La Philosophie du Siècle*).

This book contains a thoughtful criticism of the three doctrines that occupy contemporaneous thought; and which are: criticism,

positivism, and evolutionism. He considers these in conformance to his *criterium*, as simply the varieties of one single species and the absolutely identical manifestation of a common fund of beliefs and hypotheses held generally by all. According to him critical philosophy derives its direct origin from idealism. Positive philosophy, from materialism; and the philosophy of evolution from sensualism. Going further still, he considers critical philosophy as the legitimate outcome of sensualistic idealism; and positive philosophy, similarly, as the product of sensualistic materialism. Sensualism is thus the common ancestor; the three systems inter-penetrating each other. But the promoters of these systems must be judged with equity, put back into their proper places, and ranged according to their epochs. In my opinion, a philosophical doctrine is valuable, not so much by the clear solutions it affords us, as by its methods of procedure, may I say, even by the coloring it gives to thoughtful minds.

I do not hesitate to recognise in Kant, the strong, rough-handed workman of modern philosophy; in Comte, the most utilitarian; in Spencer the subtlest as well as the most successful. Kant possesses the greatest speculative vigor; Comte, the clearest scientific turn of mind; Spencer, the keenest conception of, and insight into, psychological subjects. Taking these philosophers as a whole, Spencer, in spite of his merits, appears to me the least original, the least remarkable of the three. His universal metaphysics has feet of clay. The classification of the sciences that he wished to substitute for that of Comte is obscure, devoid of general utility; in short the influence of Comte on succeeding generations will be more considerable than Spencer's, if indeed there are any philosophers who will be bold enough to avow themselves deliberately as Comtists.

This contradiction should not surprise us. It not seldom happens that the influence of a master continues even when his doctrines have suffered shipwreck. We notice this in the great schools of thought of the present day. We may say with truth, that the criticists are inclined to dialectics; the positivists, to methods and systems; the evolutionists to facts. The first excel in the analysis of ideas, but they expose themselves to be lost in abstractions. The

second endeavor to reduce to a system all scientific matter, but they run the risk of being either rigorists or becoming too elementary. The last while making rapid strides in the genesis of the subtler phenomena of life, incur the danger of accepting arbitrary *liaisons*, or of remaining in an inchoate condition. Each one possesses most valuable qualities, which it would be desirable indeed to meet with in the same mind. Each has rendered services which it is but just to recognise and which it would be unwise to disregard.

The main thing is always to be able to understand one another upon the question of what philosophy means and its relation to science. What M. de Roberty cares most for, in all his writings, is the elucidation of this problem. We must concede, that it is one which is worth striving after. And it is surely not asking too much if we demand of every philosopher, that he shall know, more or less, what is meant by philosophising.

Philosophy will be, in the future, very much what it has always been in the past, a general *conception of the world*. This is a fixed fact for M. de Roberty. Is it true that philosophy preceded science, or, that on the contrary it has always been and will continue to be subsidiary to it? Many are, we know, partisans of the first opinion; it has seemed to them that the sciences have separated little by little from the hazy and indistinct conglomerate which bore the name of theology, metaphysics, in a word, of philosophy. M. de Roberty does not hesitate to adopt the contrary opinion. Philosophy, according to him, has always sprung from science, it has always been the equal of science. But though he proclaims this equality as existing between science and philosophy, this does not in the least oblige him to recognise any equality in their manifestations "in history." The knowledge of a given science, implies a certain *conception of the world;* this is the supreme law of philosophical evolution. Philosophy is an abstract science of general interest, having for its end, the integration of the documentary evidence furnished by the various sciences. Comte was strongly imbued with this truth. Spencer made it his own, but he makes a more serious mistake than his predecessor, when he asserts that philosophy is able to "play an active part" in scientific discovery. In the opinion of

M. de Roberty, it is neither the antecedent of science, nor is it even to be called an art. Must it then be called a science? Or is it to be comprehended in science? Neither the one, nor the other. He prefers rather to regard it as a link (*"un trait-d'union"*) between these two different kinds of intellectual activity, science and art. The mental faculties may, he tells us, aim at subjugating nature, either in a direct manner, the result of which will be called science; or in an indirect way, in which case we name it art; or they may have still a third intention, taking a kind of middle course between the utility of *science* and the indirect utility of art, which while actively participating in both, facilitates as well the transition from one to the other, from which springs *philosophy*. "Most unmistakably identical," says he finally, "are the elements which produce a particular combination, in the one, they are called science, in the other philosophy."

But we must not confound the two propositions. "If a house is to be built of brick, does that mean that we are not to distinguish between the materials required in its erection?—that we are to apply to its construction, the ingredients and the procedures used in the making and firing of bricks? We never should build a house if we acted thus."

Let us not misunderstand this comparison! The house here spoken of is entirely figurative. The hypothesis which underlies it is universally accepted, but its primal condition is always wanting—i. e. universal knowledge. It would be presumptuous indeed, to draw, to-day, the plans and define the style of architecture which shall be used in our future philosophical habitation, since we do not yet possess even the materials wherewith to build it. We can only hope to erect such a temporary shelter, a fort, that may be swept away in a few hours, whenever the enemy shall have discovered an explosive powerful enough to blow it into atoms. I do not care very much, I confess, for the distinction spoken of "between a direct and an indirect utility" and the idea of philosophy forming a link between art and science. This way of representing the facts of the case, seems to me both cumbersome and incomplete. I will not stop here to discuss it. The thoughtful study of M. de Roberty

is not compromised by such a small detail, and I would rather remember the positive teaching which is given in the very striking book that I have just been criticising.

"Philosophy and science," writes the author, "are terms which define two principal *species* of the vast *genus* designated under the one name,—knowledge." The most marked trait of the philosophy of the future, will be the *distinction* between the two species, as *confusion* was the predominant characteristic of the philosophy of the past.

* * *

The work of M. de Roberty gave us a methodic history of philosophy. That of M. F. PICAVET, *The Ideologists—An Essay on the Scientific, Philosophic, Religious, etc., ideas and theories in France since 1789*, stretches over a very vast area of descriptive history. His book conducts us from Condorcet to Destutt de Tracy, and Cabanis; from these to Degérando and Laromiguière; it embraces thus nearly the whole of the philosophy of the eighteenth century, which it carries back to the seventeenth, from thence following the thread of its history, through the intervening years, down to our own times. The name "Ideologist" is vague, as are all the rest of the battle-cries which are used by the leaders of parties, or, that their adversaries may make use of against them. Ideology, in the sense used by Destutt de Tracy, signifies, that philosophers must confine themselves to psychological research, more particularly to that which concerns the origin and the formation of ideas, an immense field, embracing philology, ethnology, etc. With regard to the wrong sense which Napoleon attached to this word, it was justified in a certain measure by the pretensions of the philosophers in governing life, politics, and law, by doubtful hypotheses, which did not often accord with practice. It cannot be denied that since the time of Rousseau, we pass much too easily from theory to action, and that we fall back too readily on our imagination, to supplement our actual experience. We find in M. Picavet's book, new and valuable information about all the men who have contributed to the intellectual life of the French nation, during and since the time of the Revolution. We can trace there the origin of certain doctrines,

which have appeared to spring up suddenly before our eyes, and shall often be extremely surprised by what we shall read there. It is a most valuable and important work, showing an enormous amount of erudition, fine critical acumen, and a rare descriptive talent. It is quite voluminous (more than 600 pp. 8vo.), and some might indeed consider that it could have been more condensed. But it is primarily a book of reference, in whose pages we shall surely not complain of finding a large amount of information, when we refer to it.

* * *

With the book of M. BERNARD PÉREZ, *Le Caractère, de l'enfant à l'homme*, (Character, from Childhood to Manhood), we leave the domain of philosophy and history to enter into that of psychology. M. Pérez modestly disclaims all pretension to founding a science of character. Nevertheless, that which he has given us and produced here, bears the stamp of originality in a subject in which authors have hitherto only repeated one another. His work is composed of two parts, of which the second forms the completion of, or rather a commentary on, the first. We find here, to start with, a classification of characters, illustrated by portraits which render the developments more tangible; secondly, a study on the common combinations of the principle traits of personality.

The classification of M. Pérez is founded on movements, that is to say it is displayed in sufficiently complete groups connected with some distinct mode of expression, such as rapidity, slowness, and energy of movements. It offers the practical advantage of substituting for the four or six temperaments of the old schools, which are frequently hard to distinguish, classes more flexible and distinguished by visible gestures which betray, more or less clearly, their physiological foundation. M. Pérez has provisorily established six of these classes. He distinguishes the vivacious, the vivacious-ardent, the ardent, the sluggish, the sluggish-ardent, and lastly the balanced type. The last category is in my judgment a sort of utility-box, apparently designed to receive specimens which we are at a loss where else to put. For one of two things is certainly true,

either this balance is an insignificant trait or it is one that is dominant in the person, and it is absolutely necessary to state which.

Many will undoubtedly question this doctrine that the movements of a person express all his character and that consequently they are competent to reveal it to us. We might maintain, indeed, that if the movements supply us with the labels of each class, it is not always to be distinctly seen how the different traits of character and of intelligence (the author does not separate the two, and gives his reasons for so doing) subordinate themselves to one another and vary with the motor sign chosen to express them. There can be no question, however, that rapidity, energy, or slowness of movement, do not have certain actual and profound connections with our visceral and cerebral functions, and that the motor sign is easy to be made use of, although it does not reach all the facts which it is employed to describe, and although the explanation of these facts still remains to be sought in the physiological substratum.

M. Pérez has secondly attempted a systematisation of character-traits, by successively studying the relations of gaiety and sadness, irascibility and gentleness, courage and fear, kindness and malevolence, self-love and will, with the principal emotional intellectual and volitional traits of character. He has perceived, instinctively as it were, that the pointing out of generic, specific, and individual marks does not possess its entire worth except on the condition that we also point out *the subordination* of the same, and he has given this factor much prominence in the last chapters of his book. This portion of the work is replete with subtle observations, and ingenious and profound reflections, but it is fragmentary in character, a half-way production, I might say, between the disconnected literature of the moralist and a reasoned and methodical description such as ethology ought to furnish later on, after the manner, if possible, of the natural sciences.

The desiderata which I here briefly refer to, are not set forth to diminish the value of the work of M. Pérez. It will in its present form render great services, and I should not be at all surprised if the terminology which he has invented should pass into the language of the day, as it is convenient and easily lends itself to the

description of character-portraits. Even readers who shall find here much to criticise, will not refuse to accord to it real and solid merit.

* * *

After the work of M. Pérez, a study of my own naturally ranges itself—*La Psychologie du peintre**—concerning which I ask permission to offer a few remarks. I have set myself the problem, in this work, of determining a professional type, and I have chosen one of those which are certainly the most distinctly defined. If other authors could give us the psychology of the musician, of the lawyer, of the physician, and of the geometer, such a task would not be an indifferent performance in what concerns our knowledge of *character*, and we should arrive at the construction of a natural history of society from a different point of view and by different methods from those at the disposal of the novelist. We should accomplish, unquestionably, the passage from general and *abstract* psychology, to *concrete* psychology.

Do professional types really exist? and if they exist, what are they composed of? The question as I view it, is not bereft of interest for the psychologist. We do, no doubt, find among painters, vivacious, sluggish, and ardent individuals, and we may indeed, in studying this or that particular painter, discover in him some one or other of the combinations described by M. Pérez. But that does not stand in the way of the growth and constitution of social types, and individuals may find a natural place in the different categories of a general classification without ceasing to belong to their professional category in consequence of a natural self-grouping of their intellectual faculties, and a definite tendency of the traits of their emotional nature. It would be justifiable to say, at the same time simplifying and enlarging a little the facts, that originally our viscera form our character but our cerebral organism forms our profession; and if it is true furthermore that a certain physiological state brings with it a definite intellectual mode of operation, it is none the less true that the same culture of the mind and the long-continued habits of a profession are apt to impose upon one's personality a definite

*All the works so far mentioned are published by F. Alcan.

discipline and mean equilibrium of tendencies and sentiments; and it is in this sense that it has seemed to me we are at liberty to speak of a professional type without equivocation or violence.

Those who will not accept this manner of looking at this subject will find, I hope, some additional interest in my work on the score of the special questions which are treated of there: the heredity of genius, memory, the classification of the sentiments (implied rather than formulated), the relations of the will to the design considered as writing, the evolution of art in its connection with visual analysis, and so forth. There is here a sufficiently abundant supply of materials capable of being wrought up in social psychology and the criticism of art. But it does not become me to bestow praises on my own work, and it would be too easy for me to subject it to criticism. My readers will find in it themselves the weak portions, without my pointing them out to them; and it would be a source of great pleasure to me to have the same assurance that they will discover in it qualities which I do not perceive there.

* * *

There remains still to be mentioned *La Première partie d'une étude sur la théorie du droit musulman*,* by SAVVAS PACHA, one time governor and governor general, one time minister of public works and foreign secretary of Turkey. Savvas Pacha—a Christian of Greek descent—has held high positions in the Ottoman Empire and is esteemed as one of the most learned men in Islamic law who have ever lived. His book therefore demands the greatest consideration; it will not possess less interest for philosophers than for statesmen and jurists. In my opinion, works of this class should be consulted by psychologists as much as by sociologists; we are too much inclined nowadays to neglect certain social studies which offer us valuable information respecting the genius of races and the conditions of their moral existence.

The work of Savvas Pacha will undoubtedly contribute much toward the elucidation of some mooted points of very first importance; I should like to mention—the history of creation, and the ex-

*Published by Marchal et Billard, Paris.

position of the principles of a law which rules more than a million human beings and is intimately interwoven with their political life; a more exact knowledge of the Semitic genius; an estimate of the relations which have existed between the juridical metaphysics of the Semitic peoples and that of the schools of Greece, between the Mohammedan law and the Roman law in provinces once Romanised but afterwards subjected to the empire of the Caliphs.

It does not seem at all doubtful that the ontology of Aristotle in particular has exercised an influence on the philosophy of the Arabian jurisconsults. A second truly remarkable fact, too, is not the new ontology which they have produced, but the use they have made of it in their legislative fabrics. It is impossible to enter into details here; I limit myself to the mere pointing out of the facts.

With respect to the originality of the institutions that belong to the period of the first Abbassids, the same has been contested by a number of historians. M. Renan, among others has maintained that they are the work of the Iranian genius. Savvas Pacha refutes this opinion in a peremptory manner, and we shall no longer be able to deny, after having read him, that the Mohammedan civilisation, with the *corpus juris* which stands for its most perfect production, has really proceeded from the genius of the races that bore the banner of Islam from the confines of China to the Straits of Gibraltar.

Shall I add that we may deduce from this work, so learned and so suggestive, the elements of an instructive comparison between two grand divisions of human history whose evolution seems still to be pursued on lines wholly apart—that which we call Christianity and that which has sprung from the teachings of Mohammed?

I fervently hope that Savvas Pacha will not delay the publication of the other works which he has promised. When they appear he will have furnished us with the most considerable work which we possess on the institutions of a great division of humanity, still too little known to us.

LUCIEN ARRÉAT.

II.

GERMANY.

Productions of a literary-historical character are under certain circumstances also entitled to mention in a philosophical magazine, especially if they present to us the intellectual development and physiognomy of an individual or of a community in a scientific manner, as is done in the *Essays* of KARL WEIGAND which have just been published by Merhoff, of Munich. Of the larger essays contained in this book we will especially mention those on Voltaire, Rousseau, Baudelaire, and Taine, to which in psychological respects a high value is to be accorded, and which although not exactly easy are nevertheless pleasant reading.

Viewed from this standpoint the *History of North American Literature* by KARL KNORTZ (Berlin, 1891, Lustenöder) hardly admits of consideration; not even Edgar Allen Poe, who in the psychological point of view is of unexceptionally great importance, is in any respect profoundly treated. The work is made up of a series of well written articles which first no doubt were published in newspapers and magazines for the public at large. We deem it proper, however, to mention the work in this place, because it contains a chapter on the philosophical literature of North America, in which, we must admit, philosophy does not appear to the best advantage. The representatives of philosophy in North America, the author says, are in the main doctors of divinity and securely installed university professors, and this department of study has therefore no dangerous connections; the gentlemen calmly wend their way along the ancient and well-trodden path of the aprioristic philosophers and proscribe without any ado all modern innovations, Darwinism in particular. "As they have not as yet consigned the belief in God and immortality and the freedom of the will to the lumber-room of traditional opinions, and as they are as a rule only superficially acquainted with the results of the exact sciences, despite the fact that many assure us of the contrary, they accordingly fancy that they are easily able

to solve the imagined chief problem of philosophy, the reconciliation of religion and science."

This judgment may contain much that is true, but from the little that we personally know of things in North America, is to be decidedly restricted. Moreover, we by no means share the low opinion which the author entertains of all attempts to reconcile religion and science. Religion is a phenomenon of too great antiquity and its influence in the life of nations is too thoroughly established to entitle us, on the ground of science with which it is still involved in violent conflict, summarily to disregard it; and consequently every attempt at reconciliation is worthy of the best efforts of the noblest. It is of course a question whether we shall ever arrive at the point where we will completely understand *all* religious things, but we certainly must with time arrive at a point where religion shall no longer contain inconsistencies, contain nothing, that is, of which the absurdities are patent.

There was indeed, in Germany also, a time when the belief was very widely spread that religion as compared with science might be ignored completely; it was the time when Ludwig Büchner and Karl Vogt were so much read, when the magazine *Gartenlaube* counted its greatest number of readers. But this time is long since past, and just as since that time employment with philosophy, especially with ethics, has become more comprehensive, so also the interest in religio-philosophical questions, which aim at a reconcilement of the two hostile powers, has been considerably augmented. Aside from the German productions which have been written in a conciliatory tone, like the book, to give an example, of Moriz Carrière on Christianity and the Modern World Conception, foreign works of this same class have also been much read, particularly Drummond's *Natural Law in the Spiritual World*, to which indeed in our judgment no particular value is attributable, as it does not help us to any real knowledge but contents itself with analogies which scientifically are absolutely worthless.

Recently the little treatise *Ernste Gedanken* of the Saxon officer Von Egidy (Leipsic, 1891, Wilh. Wigand) has been much talked about. The reformatory effect of this brochure has, indeed, hith-

erto been very slight and will hardly become more extensive in the future, but the response that it has met with in the widest circles of the German public, proves that many ardent friends of religion anxiously desire that the dogmatic shackles and integuments shall be stripped from the body of the Christian beliefs, and that it shall appear, in the clearest and purest light, that which it is, the religion of love.

Theological criticism has not taken an exactly favorable attitude towards the little book of Lieut. Egidy, and even the liberals, who pay the fullest credit to the good intentions of the author call attention to the fact that the greater part of what Egidy advances has been said before and said better, and that there is an almost absolute lack of positive proposals to be adopted. The Egidy movement will thus probably have, they conclude, no lasting effects.

We cannot indeed absolutely say that these critics are wrong, if we are at all conversant with the development of protestant theology. A very instructive and opportune work in this respect is a book of the well-known Berlin professor OTTO PFLEIDERER, who, as his religio-philosophical treatises evidence, himself belongs to the reconcilers of Christianity and the modern world-conceptions. In the year 1889, at the instigation of the editor of the Library of Philosophy issued by Swan, Sonnenschein, & Co. of London, he published in the English language a work on *The Development of Protestant Theology since Kant and in Great Britain since 1825*, and this same work has now just appeared in German (published by Mohr of Freiburg) in a somewhat more extended form. As its title proclaims, and as its belonging to the Library of Philosophy would signify, the work is chiefly concerned with the influence which philosophy has exercised on theological thought. To make this influence plain, the author presents at the start, in the form of an introduction, a concise but extremely lucid exposition of the philosophical doctrines that especially demand consideration in this direction. Of German philosophers, Kant, Fichte, Schelling, and Hegel, and of English, Herbert Spencer are treated of at length.

In view of the great respect which Hegel still enjoys in America, it will perhaps interest many of the readers of *The Monist* if I

give here an utterance of Pfleiderer, which in the point of view of the history of religion is also deserving of consideration, at least on the part of those who are recognised adherents of evolutionism.

"No other branch of inquiry," says Pfleiderer, "owes so much to Hegel as History; the arbitrary construction of details from the philosophical concept which had crept in by Hegel and his immediate followers, has of course been discarded by exact historical inquirers, but there has remained that profounder conception of historical life generally as a development of the common mind of all ages and nations, conformable to law, dominated by ideas, and aiming at necessary general purposes; there has remained that profounder insight into the intricate play of phenomena, into the kernel of things and men, into the dominating ideas that lie as guiding impulses at the foundation of even the apparent disharmony of individual passions; there has remained that unprepossessed understanding for the necessity of even the contrarieties and struggles, for the errors and passions of men, for conflict is the father of all things. as Hegel says with Heraclitus, and as it is only through the struggle of partial rights and one-sided truths that the whole truth of the idea can force its way into existence; there has remained finally that intelligent respect for the heroic figures of history in which the genius of a people and of an age have been incarnated, which as the instruments of a higher power have awakened the thought that slumbered in all souls, given it clear expression, and infused in it life by their mighty deeds. Neither a Leopold Ranke, nor a Thomas Carlyle, nor a Ferdinand Christian Bauer would be conceivable without Hegel's philosophy of history."

Pfleiderer expresses himself here very cautiously concerning Hegel, and in other passages his caution is extended further still. Nevertheless, it will seem to many as if that philosopher has been too highly estimated by Pfleiderer. Especially will the followers of Herbart be dissatisfied, who was involved in violent combat with Schelling and Hegel. It is not the place here to enter minutely into this subject; but it is to be mentioned that the name of Herbart does not occur once in this large book. Perhaps Pfleiderer is of Edward Zeller's opinion who says in his "History of Modern Phi-

losophy," that the philosophy of Herbart has proved itself unfruitful. It must be confessed, indeed, that the philosophy of Hegel has proved itself for religious doctrine very fruitful; but whether we should be satisfied with its results is quite a different question. Be that however as it may; still, after Schoel has presented Herbart's ideas concerning religion in a special work, since men like Drobisch, Thilo, and Strumpell have further elaborated these ideas; since particularly Ziller in his Ethics has also profoundly treated religious problems in the sense of Herbart, it is no longer allowable to omit the name of Herbart when we treat of the modern philosophy of religion.

In other respects also we are not always in full accord with the author. So, for example, in Hausrath's *Neutestamentliche Zeitgeschichte*, a work to which we ourselves are very much indebted, the perfection of the form of the presentment is justly praised, as is also the merit of having inserted into the greater setting of universal history the development of early Christianity; but it is not mentioned that Hausrath has often allowed himself to be misguided into combinations whose flimsiness cannot escape the notice even of the lay student.

But these are only slight deficiencies of a work that is otherwise excellent and full of matter, closing with the words: "This much is certain, that the labors of the best and wisest of all the theologians of our century, who have here been passed in review before the eyes of the reader, however different the paths may be which individually they have entered upon, have yet been all directed to the one end that Christianity shall strip itself of its dogmatic coverings and fetters and evince its world-conquering power in the ethical idealism of a love that unites us with God and joins together the hands of humanity into the federation of brotherhood."

If this aim were universal, that is if it were also recognised by the theologians, a not inconsiderable portion of the dispute between religion and science would be done away with, and the sole question would then turn on the contrariety of theological and philosophical ethics. But even respecting this point a settlement would be much sooner brought about, if those concerned would evince the same

spirit of reconciliation as HANS GALLWITZ, city pastor of Sigmaringen, has recently done in his book *Das Problem der Ethik in der Gegenwart* (Göttingen, 1891, Vandenhoeck and Ruprecht). The author, it is true, deals critically not only with the philosophical ethics of a Paulsen and a Wundt, but also with the theological ethics of a Hermann and a Kaftan; still the settlement of things with the philosophers forms the bulk of this rather extensive work, the contents of which we cannot of course give here. Gallwitz also speaks in considerable detail of Kant, whom he opposes in respect of the psychological questions here involved, wholly rejecting anything like a transcendental will. If we must agree with him in this respect, we can nevertheless not follow him in his assumption of a special ethical constitution of the soul.

In conclusion let me note the titles of two works to which I shall revert in a subsequent letter. On *The Psychology in Kant's Ethics* Dr. ALFRED HEGLER of Tübingen presents a meritorious and compendious treatise of 300 pages (Freiburg, 1891, Mohr), and Professor HOSTINSKY of Prague publishes an exposition and interpretation, based on the sources, of *Herbart's Æsthetics*, in which, as is well known, ethics and æsthetics in the restricted sense are wholly severed from psychology.

CHR. UFER.

CRITICISMS AND DISCUSSIONS.

THOUGHT AND LANGUAGE.

To the Editor of The Monist:

SIR—I am glad to hear that Prof. Max Müller intends to answer our double-barrelled criticism of his article on the above subject. Meanwhile, however, I should like to say a few words with regard to the point which he selects for immediate response (see *The Monist*, Jan. 1892, p. 286). And my object in saying these few words is to remove from his mind the idea that with regard to the point in question I had the smallest intention of bringing against him "a serious charge of want of accuracy, unpardonable in a scholar." On the contrary, as regards this point I was simply defending myself from *his* charge against *me*—to wit, the charge of arrogance.

In his article on "Thought and Language" he observed, "Professor Romanes has no right to speak of men like Noiré, Huxley, Herbert Spencer, to say nothing of Hobbes, with an air of superiority." In answer to this charge I stated the bare facts of the case,—viz. that in my book I had alluded to Noiré merely for the sake of stating his theory as to the origin of speech, and of expressing my large measure of agreement therewith; that I had quoted Huxley only in places where my argument needed authoritative opinions on matters of comparative anatomy; that I had only once mentioned Hobbes, and then in order to back by his authority a philosophical doctrine for which I was contending; and, lastly, that I had never mentioned Herbert Spencer at all. Now, if my critic feels that a mere statement of these facts amounts to a serious charge against him as a scholar, I can only express my regret that he should have imposed on me the necessity of stating them.

But what now is his reply to this simple statement of facts? Briefly, he drops his own "serious charge" as regards Noiré, Huxley, and Hobbes, and takes his stand upon the case of Herbert Spencer. "It is true," he says, "Mr. Spencer's name does not occur in the index. But on p. 230 we read: 'So here again we meet with additional proof, were any required, of the folly of regarding the copula as an essential ingredient of a proposition.' Now it is well known that it is Herbert Spencer who regards the copula as an essential ingredient of a proposition." As if it

were one man alone who takes this view, and that man Herbert Spencer! Or as if Herbert Spencer's name were so specially identified with it, that in calling it a philosophically foolish view I expected my readers to understand a disrespectful allusion to him! Surely my critic knows as well as I do that this question touching the function of the copula is one which has been debated for centuries; and therefore that with much more show of reason he might accuse me of making an attack on the President of the United States, on the ground that I had expressed a decided opinion in favor of free trade.

But more than this. So far is it from being "well known that it is Herbert Spencer who regards the copula as an essential ingredient of a proposition," that I am under the necessity of asking Prof. Max Müller for references in proof of such a statement. Chapters X and XI of the "Principles of Psychology" (Vol. II) are those which, as far as I am aware, most nearly approach the subject. Yet the word "copula" does not once occur in them. Moreover, with all that Mr. Spencer has there said upon the nature and structure of propositions I am, and always have been, in full agreement.

Yours faithfully,

Oxford, Feb. 12. GEORGE J. ROMANES.

A DEFENSE OF LITTRÉ.

To the Editor of The Monist.

IF all the readers of *The Monist* for October were acquainted with the life and writings of Littré I should not have to defend him against your criticism, as everyone could see that there is more truth than poetry in my sonnet. But I fear that "the voice, the spirit, and the soul of Positivism" is not so well known as he deserves to be, and I venture to ask for space to reply.

Proceeding in order, I should like to correct the impression left by the following passage: "Comte had not nominated a successor who should in his place be the *Directeur du positivisme*. Littré had forfeited this honor on account of his quarrels with Comte in which he strongly sided with Madame Comte against her husband." The misunderstanding between the two men had a more serious origin than these family squabbles and arose from the fact that Littré would not follow Comte through the mystic vagaries of the *Politique Positive*. He admits that being under his intellectual ascendency he went too far on the new way, but he soon found that the master was violating his own method and, having to choose between them, he held to the method. Littré's refusal to join Comte in his adhesion to the régime of the coup d'état of 1851 was the immediate cause of the rupture. His "excessive tolerance" did not extend to the Bonapartes, whom he detested cordially. It is characteristic of the man that he continued his yearly subscription to the fund that he had created for his friend's support notwithstanding this break in their relations.

As to his tolerance, I think with you that he carried it a little too far in his own family. Greater firmness might have spared us the vision of priests bedeviling him in his agony and dragging his body in triumph to holy ground. But the case that you take as an example does not seem to me conclusive. It was not necessary to possess his knowledge of history in order to appreciate the difficulties attendant upon interference with his catholic wife in the education of their daughter, and as success was impossible he wisely limited his endeavor to fields unobstructed by the "eternal feminine."

Seriously, we admit that Littré was tolerant to excess, but not that the attitude of his philosophy is, as you say, "mere scepticism leading to indifferentism." In the words of M. Wyrouboff, who aided him for many years in editing the magazine called *La Philosophie Positive*, "men, no matter how superior they may be, are never abstract formulas interpreting with equal facility all the parts of a mental conception; they always represent a mixture of strength and weakness in variable proportions. . . . It seemed as if intellectual activity had absorbed all the living forces of his (Littré's) being, leaving in the place of physical activity only the faculty of passive resistance to the will of others." This refers to the man in his old age but in youth he was an athlete of remarkable strength. Renan said of him: "While his temperament was calm his mind was revolutionary, and therefore he never gave way. In July 1830, he was in the first line of those who broke into the place du Carrousel and George Farcy was shot through by his side." I am tempted to quote a little more from this master of words. "So great was his love of truth that, perhaps alone in our century, he could retract without lessening himself. Truth led him like a child. . . . It is not well to be too perfect. . . . His apparent negations were only the extreme reserve of a mind that dreads hazardous appreciations. He was so much afraid of going beyond what he saw clearly that he often stopped short of it. Hesitation that implies a thousand times more delicate worship of the eternal ideal than the rash solutions that satisfy superficial minds."

Even in old age there were no signs of "indifferentism" in his conduct. In the words of Pasteur, "At the Mesnil he was consulting physician for the whole village (always gratuitously). Continuing his labors till three o'clock in the morning, the light of his lamp shone afar during the night like a beacon that reassured the sick. It was known that at the first call, M. Littré would leave his work and go wherever his aid was needed."

These are the words of men that knew him, but my first-hand opinion of him was formed solely from his writings and his public acts as senator, etc.; fancy such a man in *our* senate!

The note in which you say that I attended positivistic lectures (Comte's?) in France together with Mr. Frederic Harrison is a flattering anachronism.

Littré's father received a sword of honor while in the navy for beating off an English ship of superior force, and the son's philosophy prompts not only to action but to action, if necessary, in the good old fashioned positive way.

My second objection refers to the line where you say that your positivism "has nothing to do with Comte or with any of Comte's disciples," and, leaving Comte aside, I hope to show that you and Littré are much better friends than you imagine. A view noted by him on p. 27, Vol. 1, of his magazine, *La Philosophie Positive*, ought to assure this happy result.

In the preface of your valuable work entitled "Fundamental Problems" you draw particular attention to the part that treats of "Form and Formal Thought," which, you say, discusses a subject of fundamental importance. "A correct conception of form and the laws of form will clear away many mysteries; it will afford a satisfactory explanation of causality and shed a new light on all the other problems of philosophy."

The part referred to begins thus: "In the introduction to his 'Critique of Pure Reason,' Immanuel Kant proposes the question: How are synthetical Judgments *a priori* possible? on the solution of this problem the whole structure of his philosophy rests, which he characterises as *Transcendental Idealism*." ("A priori, as used in the limited sense by Kant, is purely formal knowledge, while a posteriori is identical with experience.")

Further on I read, "Our own views grew out of a study of Kant's Transcendentalism"; and the first words of your "Conclusion" are these: "Although Kant's Transcendental Idealism cannot be considered as a final solution of the basic problem of philosophy, it nevertheless pursues the right method and has thus actually led us to a solution which, we hope, will in time be recognised as final."

In looking for the difference between the two solutions to find the part in yours that belongs to you alone, I see on p. 50 of "Fundamental Problems" that "Kant thinks it is a strange and wonderful fact that our formal thought (the rules of arithmetic, mathematics, logic, etc., which are *a priori*) agrees so precisely with the highest (i. e. the most general) laws of nature, which can be ascertained and verified by experience. Kant sees only two ways of solution. Either the laws of pure reason, he says, have been gathered by experience from nature, or, on the contrary, the laws of nature have been deduced from our *a priori* rules. The former solution is impossible, since the formal sciences are proven to have been formulated with the exclusion of all sensory experience. 'Therefore,' says Kant, 'the second solution only remains. Reason dictates its laws to nature'; i. e. . . . the sensory impressions are the raw material only from which the well-ordered whole of nature, as an object of science, is created by the synthetic faculty of reason. . . . Kant has taken into consideration two ways only. He overlooks the third and most obvious explanation. . . . The third possibility is that which has been propounded in the foregoing pages. According to our explanation, the formal (the highest or most general) laws of nature and the formal laws of thought are identical. Their agreement is not wonderful but inevitable as both are expressions of the forms of existence in general."

This then is your "solution of the basic problem of philosophy."

Turning back to page 34, I find under the title "The Origin of the A Priori": "Kant answers the question 'How are synthetic judgments *a priori* possible?' by showing that such synthetic judgments undoubtedly exist." "He might have ventured a step further by proposing another question: 'What is the origin of the *a priori*?' Only by answering this question could he have shown *how* synthetic judgments *a priori* are possible. This he did not do, and the omission has produced great confusion among German, French, and English thinkers." On the next page, 36, I find "According to our view, form is a property of reality as well as of our cognition. Formless matter does not exist. Form and matter as they exist in reality, are inseparable. . . . Knowledge also in its primitive shape, when it is, so to say, natural and crude, is an intimate combination of sense-perceptions and formal cognition. The sense-perceptions are the real substance of knowledge, while formal cognition is the principle which arranges and systematises sense-experiences." . . . "Logic does not create order and system in our brain, but it makes us conscious of the order that naturally grew in our mind."

In the division entitled "The Order of Nature" you say that "Formal thought represents the mere laws of thought in their abstractness, and has been acquired by abstraction. The mere forms of thought exhibit a wonderful regularity. . . . This regularity of formal thought, which is expressed in all logical laws, arithmetical calculations, and in all mathematical conceptions, has naturally grown in our mind as the psychical expression of a physical regularity in the arrangement of the various brain-structures and their combinations. The arrangement of brain-structures in certain regular forms has been effected in accordance with the same laws that govern the development of forms generally."

This answer to the question, "What is the origin of the *a priori*" is what you call the corner-stone of your positivism, which, you say, "it is to be hoped, will prove the only true Monism."

Now I give my translation of Littré's view, which he published in 1867, in an article entitled "The Three Philosophies."

"The effective certainty that the mathematical laws of number, of figure and of motion are at the base of physical phenomena, and the inductive belief that they are equally at the base of chemical and of biological phenomena induce me to note here a view upon the relation that must be found between subjective phenomena and objective phenomena, that is to say upon the relation that causes the subject to draw from the object a science and laws. The nervous substance, which is the organ of all intelligence, is made up of material elements which arrive with their conditions; and when this substance becomes capable of thinking, it passes under the conditions proper to the elements that form it; which results in (*se traduit par*) a science and its laws. The material work that takes place in the brain while it fulfils its office, is, as is known, a work of nutrition, which consists of a chemical exchange of molecules. Every chemical action is, in turn, equivalent to a certain quantity of heat; and again, this heat is equivalent to a certain quantity of motion.

Thus thought, no matter how we represent to ourselves the relation to nervous substance, is connected with mathematical modes of which it becomes conscious when it becomes luminous. Not that I would in any way have it understood that thought is but an equivalent of heat or of motion. Far from that, equivalence is not identity; and whenever we change from one degree to another in the natural and scientific order we meet a new unknown which is the characteristic of this degree. The induction that leads us to connect thought with mathematical conditions, leads us also to connect it with physical, chemical, and biological conditions, of which it is necessarily participant. Finally, when, at the highest point, it arrives face to face with itself, it studies itself experimentally like the rest, and forms its own doctrine. If it attempts to go out metaphysically into space, it is reduced to combining subjectively its own elements, turns in a circle without issue and falls back upon itself. If, on the contrary, it makes the same attempt towards nature from which it emanates, then the ways open, science is established, and positive philosophy appears. The material constitution of the nervous substance is the point of junction between the human mind and laws or general facts. If I had been younger, I should have made a work of this view, not a paragraph; but old age must hasten."

I have translated more than was necessary so as to give the "view" as a whole. Does it not contain the answer to your question, "What is the origin of the *a priori*"?

Though Littré solved your "basic problem of philosophy" he did not attach so much importance to this solution as you do because his philosophy is based upon a generalisation from all facts and not upon any one fact, however important it may be.

"Positive Philosophy is the conception of the world that results from the systematised ensemble of the positive sciences" and does not depend upon the solution of any psychological problem, although it recognises the importance of all psychological facts.

Your originality lies in your application of Littré's discovery.

The reader has his choice between Littré's positivism and your neo-Kantism, but if he side with you he must at least thank Littré for the solution on which your philosophy is based.

You say that "Comtean Positivism, especially as it is represented by Littré, consists mainly if not exclusively of the doctrine to 'let metaphysics alone.'" Is this fair to the man that solved your "basic problem of philosophy" in a paragraph?

Positivism as represented by Littré gives due importance to the subjective element. He recognised that three essentials were necessary to the completion of Comte's philosophy; a political economy, a cerebral theory, and what, for want of a better name he termed the subjective theory of humanity. This last comprised ethics, æsthetics, and psychology. Speaking of a confusion that obscures the whole discussion relative to psychology, he says: "*Cerebral theory*, *mental* or *psychological theory* are taken in two very different senses, which are never distinguished. These terms signify sometimes the organic conditions under which intelligence manifests itself, sometimes the formal conditions under which the intellect operates.

As soon as these two significations are separated we perceive the means of settling the debate as to the place of psychology; for to the question: Where should these two orders be studied? it will be answered that the first should be studied in anatomy, physiology, zoölogy, the evolution of ages, pathology, it belongs therefore without contest to biology; but it will be answered that the second should be studied in the total development of history and in the application to all the modes of cognition; it belongs incontestably to philosophy. Thus there are two psychologies, one biological, the other philosophical, one relating to the individual man, the other to the collective man, one furnishing what is necessary in order to pass from biology to sociology, the other examining the subjective instrument by the light of all positive knowledge. But this complement of philosophy I do not call psychology, I call it the *subject-theory* of *humanity;* because while including psychology, it includes much more." That is to say; ethics and æsthetics. . . . "In the order of the positive method it is at first by means of the object that human knowledge is built up, and we end with the subject." "The theory of the subject is the indispensable complement of the theory of the object."

Of positive philosophy Littré says: "While it constructs the series of the partial philosophies and thus embraces all objective knowledge, it constructs at the same time the series of effective methods and thus embraces all logical power. I borrow this expression from M. Comte, who so happily named these effective methods the logical powers of the human mind. When it has terminated its first series it is found to have also terminated the second. Thus the ensemble of the methods represents the function of the subject; the ensemble of the partial philosophies, the function of the object."

Is this what you call a "one-sided philosophy"?

You say that Littré is the worst kind of a metaphysician because he maintains that we can know nothing about first and final causes; I quote him to show his position: "Positive philosophy is at the same time a system that comprises all that is known of the world, of man and of society, and a general method including all the ways by which things have been learned. What is beyond, either, materially, the depths (fond) of boundless space, or, intellectually, the endless enchainment of causes, is absolutely inaccessible to the human mind. But inaccessible does not mean null or non-existent. Immensity, both material and intellectual, holds by a narrow tie to what we know and becomes by this alliance a positive idea of the same order; I mean to say that by touching and bordering it, this immensity appears in its double character, reality and inaccessibility. It is an ocean that washes our shore, and for which we have neither bark nor sail, but whose clear vision is as salutary as it is formidable." *Aug. Comte et la Phil. Pos.*, 2d Ed., p. 519.

As Littré had found this shore encumbered with the wrecks of expeditions that had started out in search of first causes and final causes, it is no wonder that he was a little timid. His metaphor needs explanation in the light of other passages, otherwise it might seem to discourage pursuit of the unknown. He did not

discountenance hypotheses but he was very much afraid of our inclination to take guesses for truth; and this, by the way, is the reason why he is not appreciated in this country, where we are so fond of guessing. What he really did was to discourage those navigators who would go in search of the Jumping-off-place, for the best that can befall them is to come back to where they started. The men that know the earth is round are the only men that find new worlds.

In answer to your statement that Littré's philosophy "is an inventory rather than a plan to guide science in its further evolution" I will only repeat in his words, what he has shown so well, that "positive philosophy is the ensemble of human knowledge, disposed according to a certain order which enables us to grasp its connections and its unity, and to draw from it the general directions for each part and for the whole."

You say that "Littré rejects the evolution theory and its attempts to explain ethics." I quote him from *La Philosophie Positive*, March, 1880: "Positive philosophy does not deny the evolution of ethics; far from doing so, it maintained and inculcated this evolution long before the utilitarian doctrine made it its ethical pivot." . . . . "General morality, born of the gradual culture of the sentimental basis of the human soul under the social protection of progressive centres, is entirely disinterested, and this is what makes its purity and its force."

In your philosophy you have a god and a religion, in his we have the same things, but as they are so different from what is generally understood by these terms, we use others. Here are some of the *Paroles de Philosophie Positive*: "In the eyes of history, there are no false religions, there are only incomplete religions which make their way through time and perfect themselves. . . . The definition of religion is taken from its office, which is: to put education, and consequently moral life, en rapport with the conception of the world at each phase of humanity. Whoever examines this definition will find that it satisfies all the conditions of religion, either in the past, the present, or the future. It will be perceived that theology is not inherent in the religious idea. It was not always there in the past; for we cannot give the name of theology to primordial fetichism, which addressed its worship to neighboring objects, nor to the religions that adore natural agents, such as air, wind, night, dawn; it is with polytheism that theology begins. As for the future, general science, conceiving the world differently from the way in which it was conceived during the reigns of the successive religions, takes an office equivalent to the religious office, and must in its turn place education and moral life in accord with the universe as it appears to us." . . . . "We do not outrage the old doctrine, whose past is glorious and venerable; but there is a public for which it is a dead letter; and it is to this public that we address ourselves and for this public that we labor."

Is this not aspiration to be in unison with "the order of the world," which you call God? And when Littré traces this aspiration back to its organic origin is he not explaining what you affirm?

Our philosophies are not perfect, but we must apply them, such as they are, to the needs of the day. The most pressing of all these needs, in my opinion, is unity of action among those who are animated with the new spirit.

Let us pull together.

Very truly yours,

LOUIS BELROSE, JR.

ÉMILE LITTRÉ'S POSITIVISM.

AN editor cannot make it a rule to accept criticisms of considerable length which have reference to a remark incidentally made in a book review. The present case, however, although it belongs in this category, is of a peculiar nature. First, the remark on Littré was made by the editor himself, and accordingly he feels personally responsible for it; secondly, it contains a brief delineation of Littré's character as a man and as a philosopher in the way in which he is usually regarded by the most prominent historians of philosophy. Mr. Belrose presents Littré in quite a new light and quotes passages in corroboration of his conception of Littré which are perhaps not generally known, for they are buried in articles of the positivistic journal *La Philosophie Positive*, and this journal enjoyed neither a long life nor a large circulation; nor is it to be had in any of the libraries accessible to me. Seventeen editorial articles were republished in bookform, (*La Science. Au point de vue philosophique, par* É. LITTRÉ. Paris, 1873), but the article "The Three Philosophies" is not among them.

If Mr. Belrose's conception of Littré proves to be true, I shall not only gladly correct my own wrong view of Littré, but I wish also to call attention to the fact that he has been misrepresented by almost all and certainly by the best and most painstaking philosophical historians.

I cannot however in the main points accede to Mr. Belrose's view and will have to sustain my former opinion that M. Littré was an agnostic. He made it a matter of principle to suspend his opinion on some of the most fundamental philosophical problems, which he considered as inaccessible. His positivism, accordingly, differs *toto cælo* from the positivism presented in *The Monist*. His philosophy, like that of Comte, is so far as I understand it, a policy of let-metaphysics-alone. It gives up the struggle with metaphysics as a hopeless undertaking. Therefore, I should say, Littré's positivism has not conquered metaphysics, and although it lets metaphysics alone, metaphysics plays an important part in it. Littré is an agnostic and like every agnostic that believes in the unknowable, a metaphysician without knowing it.

The doctrine of the three stages of knowledge, viz., the theological, metaphysical, and positive stages, appears to me of less importance. The doctrine of the three stages is at the same time not properly a Comtean idea; Comte adopted it from Turgot, the great statesman and one of the greatest men as a thinker and also as a character that ever lived and who is too little appreciated as such.

The main doctrine of Comte's positivism is the doctrine that first and final causes cannot be known, and we must abandon our search for them; that human knowledge is limited to the middle, while the two ends are inaccessible. These insoluble questions, he declares, have made no progress from the beginning. Mr. Lewes in his book "Comte's Philosophy of the Sciences" expresses this agnosticism in the following words (p. 31): "Our province is to study her [nature's] laws, to trace her processes, and, thankful that we can so far penetrate the divine significance of the universe, be content—as Locke wisely and modestly says—to sit down in quiet ignorance of all *transcendent** subjects."

This idea has so far as I am aware never been given up by Littré; it remained the basis of his belief in the unknowable and his works abound in expressions that concerning the main problems of life, "the positive philosophy will neither assert nor deny anything."

Littré concludes the last article of his volume "La Science" with the following words:

"Le domaine ultérieur est celui des choses qui ne peuvent pas être connues. La science positive professe de n'y rien nier, de n'y rien affirmer; en un mot, elle ne connaît pas l'inconnaissable, mais elle en constate l'existence. Là est la philosophie suprême; aller plus loin est chimérique, aller moin loin est déserter notre destinée."

This quotation alone, I think, settles the first main point at issue.

Now I maintain that Comte's view of causation where he refers to first and final causes is fundamentally wrong; causation is transformation and causality is the formula under which we comprehend the changes of matter and energy that take place. The expressions first and final causes are misnomers (see "Fundamental Problems," the chapter The Problem of Causality). First cause is either the starting point of a series of some longer chain of causes and effects, or as the term is generally applied or rather misapplied, stands for the last ground or reason, i. e. the answer given to the ultimate question why?, which is the most general *raison d'être* that would explain and contain all the other and less general *raisons d'être* regarding the nature of existence. The term final cause, again, means either the last cause in a series of causes or (and so it is generally used) it is a misnomer for purpose; and the final cause supposed to be inaccessible to human comprehension is the purpose of the existence of the world at large. I object to there being three kinds of causes. There is one kind of causality only, and the causes of this causality in all the causal processes with which we are confronted are perfectly intelligible.

The problem of the first cause of the origin of our world, viz. the solar system and the milky way, was attacked first by Kant and later by Laplace, and the latter, without knowing of Kant's solution, solved it in the main in the same way. All recent investigations stand upon this Kant-Laplace hypothesis so called, having added corrections only as to details. Shall we declare that these labors are vain

* Italics are not mine.

and gratuitous efforts of vague speculations? Littré says, with reference to such speculations, concerning the past and future states of the world (le monde):

"La dissémination primordiale de la matière qui devait le composer, la dissémination future de la matière qui le compose, dépassant toute expérience, dépassent toute conjecture."

If I misunderstand Littré, it appears to me a pardonable mistake.

Yet is not the problem as to the origin of the world at large, why matter and energy exist at all, insolvable? Littré says that the positive cosmogonies, such as the doctrine of evolution do not touch the absolute; they have nothing to do with first and final causes. He says: "Les cosmogonies positives la [i. e. la place des cosmogonies religieuses] remplissent, non pas qu'elles aient la prétention ni le pouvoir de pénétrer dans l'absolu et d'embrasser les causes premières et finales."—l. c., p. 560.

That kind of causality which is sometimes called "ontological," having reference to the existence, not of single things as transformations from other things, but of the world at large and formulated in such questions as how did the universe itself, the world as a whole, originate, is properly speaking no causality, it is not a question concerning a cause, but concerning a *raison d'être*. However without haggling about the words cause and *raison d'être*, this ontological causality so called is by no means beyond human comprehension. The ontological question has found a very definite answer in the formulation of the law of the conservation of matter and energy; which declares that existence at large did not originate, the total amount of matter as well as of energy existed always and will exist always. It has not been created; it is uncreatable and indestructible; it is eternal.

Littré is quite explicit in declaring that the positive philosophy lets alone all theological and metaphysical problems. It is neither atheistic nor theistic, and does not side with either materialism or spiritualism. He says:

"Ni spiritualiste, ni matérialiste, la philosophie positive écarte de la science générale les débats que la science particulière a depuis long temps et à son grand profit rejetés."—Preface d'un disciple in Comte's "Course de Phil. pos." p. xxvii.

Littré characterises as the main object of the positive philosophy, "to give to philosophy the positive method of the sciences, to the sciences the idea of the unity of philosophy." He says: "Ainsi fut accompli ce qu' on doit appeler l'œuvre philosophique du dix-neuvième siècle, donner à la philosophie la méthode positive des sciences, aux sciences l'idée d'ensemble de la philosophie." Preface, p. viii.

I am in perfect agreement with Littré that this is the object of positivism; but, if I understand Littré correctly, I disagree from his conception of the positive method. He limits the positive method to what he calls "experience," and excludes every notion of the *a priori*. Littré apparently misunderstood the proper meaning of Kant's idea of the *a priori*, for he used as a matter of course the *a priori* method wherever it was indispensable, so for instance in mathematics and in the application of mathematics.

Mr. Belrose says:

[Littré] "solved your basic problem of philosophy [i. e. what is the origin of the *a priori*] in a paragraph."

The problem of the *a priori* reasoning is the question "Why can we know certain things before we have tested them by experiment? Man has not arrived by experience but by pure reasoning at the conclusion that the sum of the angles of every plane triangle has 180 degrees. How is he justified in declaring *a priori* that the angles of a certain plane triangle make up 180 degrees, although he has not measured them?" This problem is the fundamental problem of the scientific or positive method; it is the same problem which Mr. Charles S. Peirce discusses in his article (see pp. 321 et seqq. of the present number of *The Monist*), for the problem of apriority is identical with the question of necessity.

Littré has, so far as I know, never discussed the problem of apriority and necessity. He has simply rejected the idea of the *a priori* as the method of a false metaphysics, which is incompatible with the *a posteriori* method of positive science. The passage quoted by Mr. Belrose most certainly does *not* contain a solution of the problem. Littré declares therein that every chemical action is equivalent to a certain quantity of heat; and again this heat is equivalent to a certain quantity of motion. Thus, he says, thought is connected with mathematical modes of which it becomes conscious. Thought, he adds, is not an equivalent of heat or motion, for equivalence is not identity, but it is connected with mathematical conditions. This means that that kind of brain-action which represents conscious thought, depends upon definite proportions. But what in all the world has this idea to do with the problem of apriority? The phrase "mathematical modes" (which is misleading in this passage) is an unfortunate expression for "proportions" and we must add that Littré is mistaken when he says that the nervous substance when it becomes luminous, becomes conscious of these mathematical modes with which it is connected. Aside from "luminous" being simply an allegorical expression for conscious, it is wrong to say that the nervous substance becomes conscious of the mathematical modes of heat as they are proportioned in the brain. A sentient being knows through sensation nothing about the mechanism or the mechanical proportions of its own sentient structure. Sensation is the act of a becoming conscious not of the sentient structure itself but of the meaning which this sentient structure has acquired, and a consciousness of the mathematical modes which according to Comte's hierarchy of the sciences ought to be the beginning of knowledge develops at a very late period. Any explanation of the origin of *a priori*, be it ever so brief, would lead us too far away from the points of our controversy. It is sufficient here to point out that the passage quoted by Mr. Belrose, contains no solution of the the problem of our knowledge and certitude of mathematical, arithmetical, and other purely formal laws. On the contrary, this very passage is replete with error; it is a misstatement of facts and does not even bring to light the difficulties of the problem.

Littré was prejudiced against the *a priori*, and his prejudice induced him to underrate its importance. I read in one of Littré's passages quoted by Mr. Belrose:

"If it [thought] attempts to go out metaphysically into space, it is reduced to combining subjectively its own elements, turns in a circle without issue and falls back upon itself."

The *a priori* method of thought subjectively combining its own elements, is by no means a turning in a circle without issue so that in the end it will fall back upon itself. The *a priori* method of thought subjectively combining its own elements is employed by arithmetic, mathematics, and logic, and we are confronted with the astonishing fact that rules, or formulas, or calculations which were made by pure thought subjectively combining its own elements, are applicable and hold good as reliable guides in our experiments. If there were no *a priori*, how could we foretell or, what is more still, how could we predetermine the course of nature? The *a priori* has been wrongly employed by the so-called metaphysical philosophers to give us information about the substance and essence of the world. But the misapplication of the *a priori* is no reason for denouncing it as radically wrong.

The existence of the *a priori* is an undeniable fact. Kant was right in recognising it in its sweeping importance, yet he was wrong in his interpretation of the *a priori*, which according to his transcendentalism was based exclusively upon a peculiarity of the mind and not upon the nature of things. The positivists in France did not only object to the wrong interpretation of the transcendentalists but also denied the existence of the *a priori*. Accepting the principle that every knowledge must ultimately be a statement of facts, the question How is the *a priori* to be based upon facts? became in my conception of philosophy the burning problem which was next in order as a conciliation between Kant and Comte.

The French positivists, foremost among them Comte and Littré, have not given us an explanation of what is true and false in the theological and metaphysical notions of first and final causes, of the *a priori*, of God, of substance, of force, etc.; they have simply abandoned the investigation of these ideas which are after all the most important tools in the household of the human mind for scientific and ethical purposes; and thus they have, in spite of their positivism in questions of detail, retained the metaphysical method of *a priori* reasoning which is quite legitimate in the formal science but out of place concerning facts. Take for instance the following argument concerning the materiality of things:

"Là, c'est à dire dans les sciences positives, on ne connaît aucune propriété sans matière, non point parce que, *a priori*, on y a l'idée préconçue qu'il n'existe aucune substance spirituelle indépendante, mais parce que, *a posteriori*, on n'a jamais rencontré la gravitation sans corps pesant, la chaleur sans corps chaud, l'électricité sans corps électrique, l'affinité sans substances de combinaison, la vie, la sensibilité, la pensée, sans être vivant, sentant et pensant."—*La Science*, p. 307.

I do not mean to say that there are immaterial or spiritual substances, but I should say that any purely *a posteriori* argument in favor of their non-existence is

insufficient. Would Littré mean that a Zulu should declare that ice cannot exist because he has never seen water frozen as hard as a stone? Any amount of experience, i. e. all *a posteriori* evidence, is in parts and will out of itself never acquire universal validity.

How strongly Littré is still implicated in the metaphysical method of applying *a priori* ideas to *a posteriori* experiences can be learned from the following statement:

"Le monde est constitué par la matière et par les forces de la matière: la matière dont l'origine et l'essence nous sont inaccessible; les forces qui sont immanentes à la matière. Au delà de ces deux termes, matière et force, la science positive ne connaît rien." Preface, p. ix.

The metaphysical ideas, matter and force, are *a priori* notions of mystical entities or things in themselves, and thus it appears natural that experience should know nothing of them. But real matter and actual force are not unknowable existences. They can be known. We know something of them and positive science is engaged in broadening and deepening this knowledge. Says Littré:

"Les propriétés physiques sont manifestes en toute substance, dans quelque état qu'elle soit, isolée ou non isolée, et s'exercent sur les masses; les propriétés, n'apparaissent qu'entre deux substances, ont besoin de la binarité et s'exercent sur les molécules; enfin les propriétés vitales dépassant la binarité, ne sont compatibles qu'avec un état moléculaire plus composé." Preface, p. x.

One of the fundamental principles of positivism, as I conceive it, is the definition of knowledge as a description of facts or of their properties. We call certain properties of the facts (i. e. the objects of our experience) matter and others force. When we say that we do or do not know a certain phenomenon we mean that we have or have not as yet succeeded in placing them properly in that system of thought-symbols of which our mind consists. Yet there is no sense in speaking of matter and force as being unknowable while the properties of matter and force are said to be manifest and appearing under certain conditions.

I have presented the main reasons why I still hold that there is a radical difference between Littré's view of positivism and my own. Littré is an agnostic and he was an agnostic before that name had been invented. His objection to metaphysicism consists in the doctrine not that the object of metaphysics is a chimerical non-existence, but that the object of metaphysics exists yet it cannot be known. Thus Littré is as much a metaphysician as those philosophers whom he censures for their metaphysical views. He does not censure them for believing that the metaphysical exists, but for believing that it is knowable and attempting to investigate its nature.

As to the hierarchy of the sciences I shall simply quote a few extracts from Eugen Dühring's criticism of Comte. Dühring says (*Krit. Gesch. der Phil.*, p. 486):

"If Comte's *positivism* were nothing more than what we have here laid down, its main contents would, strange enough, consist in *negativity*. The criticism of a certain kind of metaphysics, viz. of an ontology phantastical to a greater or lesser

extent, would form its most significant character. The other element which consists in presenting a hierarchy and unitary conjunction of some of the sciences which are called positive in the usual sense of the term, cannot pretend to be philosophy in the higher sense of the word or even to be useful for science. A general view of knowledge, whether it consists of six or sixty volumes, does not add the least iota to the contents of our knowledge. . . . We cannot expect that a specialist should be pleased with a hierarchical sketch of his science, especially if the delineations are filled out with details of which he would be a better judge."

It is true, and I concur in this with the French positivists, that a positive philosophy must be a systematic arrangement of knowledge. But I conceive it to be the philosopher's work, not to take an inventory of the sciences, but to define the fundamental concepts of scientific enquiry and to elucidate the methods of cognition. Such fundamental concepts are the ideas, truth and criterion of truth, cause and effect, mind, thought, knowledge, ethics, etc. Concepts are the tools of thought and the practice of using them correctly has to be learned.

Positivism is not the original invention of a world-system, but the systematising of statements of facts so as to produce a world-system. The old philosophers gave us first a world-system, from which and in accord with which they defined their views of truth, cognition, cause, etc. They began to build their philosophy from the top down. Positivism begins from the bottom and is building up to the top with the assistance of the special sciences. A positive philosophy is inseparable from, but it cannot be replaced by, the sciences. The field of philosophy is to superintend the method and the plan of building, so as to compare the details and bear in mind the unity of the whole. In this sense Dühring says in criticising Comte (p. 486):

"However, concerning the form of the connections of methodical reflections, something can be done. Yet it must be possible to separate everything of such a kind and also new insights, so as to constitute a special branch of knowledge. Otherwise they will escape the specialists' attention. . . . Not only Comte but all philosophers given to the idea of systematisation and construction of particular knowledge have made attempts in this direction which at most may range as sketches or popular presentations in a higher sense."

Concerning Littré's view of Comte's religious vagaries Dühring says (p. 483):

"His [Comte's] biographer, the Academician Littré of Paris, and also Stuart Mill are right in considering 'The Course of Positive Philosophy' as the main and fundamental work which is decisive as a contribution of his and a source of instruction to the world. However, they are very one-sided when they overlook that the philosopher even in his vagaries exhibited a universality of mind which remains superior to the standpoint of either Littré or Mill."

I agree with Mr. Belrose that Comte's religion as he conceived it consists of vagaries, but the main idea of developing the religions of the past which, as Littré says, are not false but only incomplete religions, into a religion that shall be in accord with the science of our day is no vagary, but a great and an important ideal.

Far be it from me to belittle Littré because I disagree from him in some fundamental questions. He was in his time, he is still, and will remain for ever a star of first magnitude in our philosophical galaxy. That which I consider as his errors does not detract from his greatness. Were not Kant's mistakes in a similar way closely interwoven with his greatest merits? It is flattering to me that Mr. Belrose finds an agreement between his master's and my views concerning the basic problem of philosophy, but I cannot discover it. Yet I gladly acknowledge that there exists an agreement of aim, and this agreement of aim which finds its truest expression in the word "positivistic" is perhaps of greater importance than the agreement of views.

P. C.

OBSERVATIONS ON SOME POINTS IN JAMES'S PSYCHOLOGY.*

In calling attention to some objections to the views advanced by Professor James on the subjects of Belief, Emotion, and Will, it is only justice to myself to express the admiration I feel for his work as a whole. The thoroughly scientific spirit which pervades it, the author's candor in admitting and his skill in surmounting difficulties, his learning and his originality, his aptness in illustration, and the energy and vivacity of his style combine to make it full of interest as well as instruction. It is because it should be, and doubtless will be widely influential, that it is important that any doubtful positions assumed in it should be subjected to a careful examination.

I shall endeavor to avoid any misrepresentation of the views which I combat, but space will not allow me to do full justice to the arguments by which they are supported, if such a thing is possible for an antagonist. For this, I must refer the interested reader to the original book. If what I have to say should have the effect of increasing the number of its readers, I shall not have written altogether in vain, whether I succeed or fail in setting the truth in a clearer light.

I. BELIEF.

Professor James entitles the chapter devoted to this subject "The Perception of Reality," and defines belief to be "the mental state or function of cognising reality." He explains that, "As used in the following pages, 'Belief' will mean every degree of assurance, including the highest possible certainty and conviction" (Vol. II, p. 283).

According to this definition, erroneous beliefs, such, for instance, as the belief that the earth is flat, stationary, and the centre of the universe, or the delusion of an insane man that he is Jesus Christ, are cognitions of reality. Professor James would probably say that they are realities to the mind entertaining them, and it is true that the feeling of belief is the same, whether the thing believed be true or

* *The Principles of Psychology*, by William James, Professor of Psychology in Harvard University. In two volumes. New York: Henry Holt & Company, 1890.

false. I think, however, that it is more customary to use the verb which he employs in connection with beliefs which agree with the objective facts, and that the "feeling" or "sense" of reality would be a better term than "perception" or "cognition."

This, however, is not, to my mind, the most serious objection to the definition. Although Professor James does not use the word "knowledge" in this connection, it seems evident, from the passage quoted above, and from what he says elsewhere, that he considers all kinds, as well as all degrees of certainty to be beliefs. It seems to me evident, on the other hand, that many of our cognitions of reality are not properly called beliefs. As an instance, I will quote the illustration with which he opens the discussion of "The Various Orders of Reality" (p. 287).

"Suppose a new-born mind, entirely blank and waiting for experience to begin. Suppose that it begins in the form of a visual impression (whether faint or vivid is immaterial) of a lighted candle against a dark background, and nothing else, so that whilst this image lasts it constitutes the entire universe to the mind in question. Suppose, moreover (to simplify the hypothesis), that the candle is only imaginary, and that no 'original' of it is recognised by us psychologists outside. Will this hallucinatory candle be believed in, will it have a real existence for the mind?

"What possible sense (for that mind) would a suspicion have that the candle is not real? What would doubt or disbelief of it imply? When *we*, the onlooking psychologists, say the candle is unreal, we mean something quite definite, viz. that there is a world known to *us* which *is* real, and to which we perceive that the candle does not belong; it belongs exclusively to that individual mind, has no status anywhere else, etc. It exists, to be sure, in a fashion, for it forms the content of that mind's hallucination; but the hallucination itself, though unquestionably it is a sort of existing fact, has no knowledge of *other* facts; and since those *other* facts are the realities *par excellence* for us, and the only things we believe in, the candle is simply outside of our reality and belief altogether.

"By the hypothesis, however, the mind which sees the candle can spin no such considerations as these about it, for of other facts, actual or possible, it has no inkling whatever. That candle is its all, its absolute. Its entire faculty of attention is absorbed by it. It *is*, it is *that;* it is *there;* no other possible candle, or quality of this candle, no other possible place, or possible object in the place, no alternative, in short, suggests itself as even conceivable; so how can the mind help believing the candle real? The supposition that it might possibly not do so is, under the supposed conditions, unintelligible."

I readily grant that it is, under the supposed circumstances, unintelligible that the candle should be thought to be unreal, but it seems to me equally so that it should be believed to be real. What does Professor James mean by a belief in the reality of the candle under such conditions? Nothing more than that the mind is conscious of a sensation which we know, but it does not, is like that produced by the sight of a candle. This sensation is certainly a reality, and the only possible reality to that mind. Professor James must, then, be understood as maintaining that a sensation, pure and simple, is a belief in an object exciting the sensation. If, for instance, the first consciousness of the supposed mind were the odor of a

rose, or the whistle of a locomotive, he must admit that the mind would believe in the rose or the locomotive. If I have a headache, or am hungry or tired, I not only have beliefs about these sensations, but the headache, the hunger, the weariness, are themselves beliefs. Now I submit that this is contrary to all ordinary use of language. It is, perhaps, impossible for an adult, with his mind full of memories of past experiences, to have a sensation without some sort of a belief about it, but although the sensation and the belief may be inseparable, they are not indistinguishable, and, as a matter of fact, every one does distinguish between his sensations and his beliefs about them. I do not think it would be quite correct to say even of an adult who had never seen or heard of a candle, that, on seeing one for the first time, he would believe in the reality of the candle, although doubtless he would believe he saw something real—a real flame, for instance.

If it be admitted that sensations are entitled to be called beliefs, it seems impossible to stop short of the conclusion that all states of consciousness are beliefs. Emotions and volitions are as much realities as sensations, and are known as such by the mind that experiences them. That memory and imagination involve belief, is too evident to need discussion. But if this be the case, the chapter on belief could have been very greatly abbreviated—need not in fact, contain more than four words. To say that all consciousness is belief would perhaps simplify matters, but it would not advance our knowledge very much, nor would it accord with the ordinary use of the word, which has reference to a particular kind of consciousness, which every one knows, however hard he may find its definition.

It seems to me, therefore, that Professor James's definition of belief is defective in two ways. There are beliefs which are not cognitions of reality, and there are cognitions of reality which are not beliefs. Especially in regard to the latter class, I think that the definition confuses a distinction that is real and important, between different kinds of knowledge. We know our sensations, emotions and volitions in a way which differs not only in degree but in kind from any usual, or, I think, legitimate sense of the word "Belief."

Perhaps it would be the safer course to rest content with pointing out the objections to the author's definition without laying myself open to retaliation by attempting one of my own, but it does not seem to me impossible to give one which will include all that is understood by the term and nothing more. I should say that belief is the sense or feeling of relation between mental objects. That we have belief whenever we have this feeling, seems to me too plain to require argument, and I am unable, after a good deal of reflection, to call to mind any belief that is not included in the definition. If I see, or imagine that I see a lighted candle, it may excite in my mind a great variety of beliefs, as, that the flame is hot, that the light and heat are caused by the chemical union of oxygen with carbon and hydrogen, that the material of which the candle is composed is wax, paraffine or tallow, that it has a cotton wick, that it is of a certain size, weight, and color, and so on indefinitely. All of these are evidently ideas of relation. To say "flame," or "hot"

does not express a belief, unless something else is understood, but to say "flame is hot" does so. If I say that the color red is equal to the square of the hypothenuse of a right-angled triangle, I fail to express a belief because the mind perceives no relation between the objects, and the answer to such a statement would be, not that it is or is not true, but that it has no meaning. The only cases which occur to me in which it might be plausibly argued that a belief did not involve the feeling of relation are such impersonal expressions as "it rains," or, "it is cold." The exception, however, is only apparent, arising from the erroneous idea that everything which is implied in language must be expressed. When we say, "it rains," we mean, "rain is falling." In either form of language, the thought conveyed is that of the relation of the drops of water and their motion. The stock-broker, with his pre-arranged code, may communicate the ideas of a long sentence in a single word, or the Freemason may do the same to the initiated by a gesture. In such a case, it would be absurd to contend that no relation is felt or communicated because there is no formal subject or predicate.

Whatever may be thought of the sufficiency of my definition, I risk the assertion that it includes all beliefs that can be affirmed, denied or doubted. We never question our sensations, emotions or volitions—we have them, are aware of them, and that is the end of the matter. It is the relations of our sensations to each other, and to our pleasures and pains, our choices and rejections, that involve us in all sorts of perplexities. The whole question of the grounds of belief in general, and the truth or falsehood of particular beliefs is a question of relations. It is, then, in the sense indicated above that I shall use the word hereafter.

Having settled the definition, it may be worth while to consider for a moment whether this feeling of relation, which can only be known by experience, is enough like any other mental states to be classed with them. On this point Professor James says: "*In its inner nature, belief, or the sense of reality, is a sort of feeling more allied to the emotions than to anything else.* Mr. Bagehot distinctly calls it the "emotion" of conviction. I just now spoke of it as acquiescence. It resembles more than anything else what in the psychology of volition we know as consent. Consent is recognised by all to be a manifestation of our active nature. It would naturally be described by such terms as 'willingness' or the 'turning of our disposition.' What characterises both consent and belief is the cessation of theoretic agitation through the advent of an idea which is inwardly stable, and fills the mind solidly to the exclusion of contradictory ideas. When this is the case, motor effects are apt to follow. Hence the states of consent and belief, characterised by repose on the purely intellectual side, are both intimately connected with subsequent practical activity. This inward stability of the mind's content is as characteristic of disbelief as of belief. But we shall presently see that we never disbelieve anything except for the reason that we believe something else that contradicts the first thing. Disbelief is thus an incidental complication to belief, and need not be considered by itself." (P. 283).

I am unable to satisfy myself whether, in the above passage, Professor James has in mind the feeling of belief or other feelings which often accompany it. The "cessation of theoretic agitation," "willingness," "turning of our disposition," are accompanied by feelings which I should say are not only like, but identical with emotion. In the case of old, confirmed beliefs, however, theoretic agitation ceased, and the turning of the disposition occurred, if at all, long ago, and I am unable to recognise anything resembling emotion in my belief that two and two make four, that cows eat grass, that iron is a metal, and many others that might be mentioned. Nor do these beliefs, at the present time, give rise to motor effects, which, so far as I am able to see, only result from such beliefs as are, directly or indirectly, associated with emotion. If such beliefs as I have mentioned are not purely intellectual, as distinguished from emotional phenomena, I should be at a loss to know where the distinction is to be made between "the head" and "the heart." The sense of relation seems to me to be the most purely intellectual of all the mental functions, and, although it may give rise to all sorts of emotions, the more settled, undisturbed and unquestioning the belief, the less likely is it to give rise to any but the feeling of calm, which seems to me to be the antithesis of emotion. I should say that belief is a feeling *sui generis*, without enough analogy with any other to justify classing them together.

I have already quoted the illustration with which Professor James opens the discussion of the subject of Reality. After quoting from Spinoza, to the same effect, the supposed case of a horse with wings imagined to be real in the absence of any contradictory thought, he goes on to say: "The sense that anything we think of is unreal can only come, then, when that thing is contradicted by some other thing of which we think. *Any object which remains uncontradicted is ipso facto believed and posited as absolute reality.*" (P. 288). Elsewhere he says:

"*. . . all propositions, whether attributive or existential, are believed through the very fact of being conceived, unless they clash with other propositions believed at the same time, by affirming that their terms are the same as the terms of those other propositions.*" (P. 290).

This, I think, is stated too strongly, at least, in the latter quotation. A proposition that is uncontradicted will be believed, but it is not necessary that the contradictory proposition should be believed in order that the first may fail of belief. I believe nothing, at present, contradictory of the proposition that it is now raining in Boston. I think it not improbable that such may be the case, but at the same time the contrary proposition is present to my mind, that it may not be raining in Boston, and the result is the state of mind which Professor James very properly regards as the opposite of belief—doubt. But supposing that a proposition is presented to the mind, which, being for the time uncontradicted, is believed, and that subsequently another, contrary proposition is presented, is it certain that the latter will be disbelieved? May not a state of doubt replace belief in this case also? Or supposing that two propositions, which have been believed independently, are

brought into juxtaposition in such a way as to show that they are inconsistent, how are we to determine which if either, shall be believed? Professor James seems to teach that it is a matter of choice.

"That we can at any moment think of the same thing which at any former moment we thought of is the ultimate law of our intellectual constitution. But when we now think of it incompatibly with our other ways of thinking of it, then we must choose which way to stand by, for we cannot continue to think of it in two contradictory ways at once. *The whole distinction of real and unreal, the whole psychology of belief, disbelief and doubt, is thus grounded on two mental facts—first, that we are liable to think differently of the same; and second, that when we have done so, we can choose which way of thinking to adhere to and which to disregard.** The subjects adhered to become real subjects, the attributes adhered to real attributes, the existence adhered to real existence; while the subjects disregarded become imaginary subjects, the attributes disregarded erroneous attributes, and the existence disregarded an existence in no man's land, in the limbo 'where footless fancies dwell.'" (P. 290).

The doctrine that belief is, in the last analysis, a matter of choice is a prominent feature of Professor James's teaching, to which I shall have occasion to refer again. It seems to me to involve him in some inconsistencies. For the present, it should be noted that he admits the reality of every mental object in its proper relations.

"If I merely dream of a horse with wings, my horse interferes with nothing else and has not to be contradicted. That horse, its wings, and its place are all equally real. That horse exists no otherwise than as winged, and is moreover really there, for that place exists no otherwise than as the place of that horse, and claims as yet no connection with the other places of the world. But if with this horse I make an inroad into the *world otherwise known*, and say, for example, 'That is my old mare Maggie, having grown a pair of wings where she stands in her stall,' the whole case is altered; for now the horse and place are identified with a horse and place otherwise known, and *what* is known of the latter objects is incompatible with what is perceived of the former. 'Maggie in her stall with wings! Never!' The wings are unreal, then, visionary. I have dreamed a lie about Maggie in her stall." (P. 289).

Here, the dream is a reality, and the winged horse is as really a part of it as the mare Maggie is of the outside world. The reality of the winged horse in the one case, and his unreality in the other, depend on his relations to other mental objects. So, for instance, if any one should say that a mermaid was a creature with the portion of a man from the waist up united to the body and limbs of a horse, I should be justified in contradicting him, and saying that it was not a mermaid but a centaur that he had in mind. It would not be a valid answer to say that there were really no such things as mermaids and centaurs. In mythology, a centaur has as definite a structure as a giraffe has in zoölogy, and it is as inexcusable to confound the one as the other with anything else. This point is amplified by the au-

* The italics, in this and my other quotations, are the author's.

thor in a section on "The Many Worlds," in which the various objects of thought are found in their proper relations, and out of which each one selects a world of practical realities, according to his dominant habits of attention. *In the relative sense*, in which we contrast reality with unreality, or consider one object more real than another,

"*Reality means simply relation to our emotional and active life . . .* in this sense, whatever excites and stimulates our interest is real." (P. 295).

"*Whatever things have intimate and continuous connection with my life are things of whose reality I cannot doubt.*" (P. 298).

This power of exciting and stimulating our interest, Professor James finds to be possessed in a pre-eminent degree by sensations, which thus become, directly or indirectly, our tests of reality, and among which those which are pleasurable or painful hold the first rank. Next to them, if not of equal power, are emotions.

"The greatest proof that a man is *sui compos* is his ability to suspend belief in the presence of an emotionally exciting idea. To give this power is the highest result of education. In untutored minds the power does not exist. Every exciting thought in the natural man carries credence with it. To conceive with passion is *eo ipso* to affirm." (P. 308).

Professor James's account of the grounds of belief seems to me inadequate in that it fails to show the connection between our sensations and emotions and other mental states and our beliefs. Why is it that the sight of the heavenly bodies, for instance, awakens in different minds such diverse beliefs as the Ptolemaic and the Copernican systems of astronomy? What does a man who is frightened believe? What belief would necessarily result from a colic? It is not enough to say that sensations and emotions are connected with belief; we want to know how they are connected.

Bearing in mind the definition of belief as the sense of relation between objects, the question resolves itself into the origin of feelings of relation. As relations are of various kinds, they may be suggested to the mind by different circumstances. They may, I think, be divided into three classes:

1) Relations of likeness and unlikeness. These result from the comparison and discrimination of objects. All the beliefs involved in the recognition and classification of objects arise in this way. When, on seeing a certain object, I say that it is a bay horse, and will weigh about eleven hundred pounds, I give expression to relations of comparison. The comparison may be immediate, between objects simultaneously present to the senses, or alike present only to memory or imagination, or between a present object and a remembered one, or mediate, by comparison of two or more objects with some other. All mathematical truths are of this kind.

2) Relations of cause and effect, of substance and quality, of whole and component parts, of order in time and space, are due to association. When I say of the horse that his movements are caused by muscular contractions, that he is of a

gentle disposition, that he has a bony skeleton and red blood, that he is five years old and is harnessed to a carriage, I express relations of association. In his chapter on Association Professor James says:

"*Belief* in anything *not* present to sense is the very lively, strong, and steadfast association of the image of that thing with some present sensation, so that as long as the sensation persists the image cannot be excluded from the mind." (Vol. I, p. 598).

I do not think it is a fact that the image of the thing believed in need be associated with any present sensation. I am not aware, for instance, that there is, at present, any such association in my belief in the existence of the city of Constantinople, or that Queen Victoria is reigning in England. The associations in these and similar cases are with objects of memory and not with present sensations. On the other hand, what we mean by belief in a present object always involves memory of the past. When we say that we believe in anything, we either mean that it is like other things of the same sort of which we have had experience, or that it stands in some other relation to them. Complete loss of memory would not only destroy all our past beliefs, but, if it were permanent, would prevent our ever forming any new ones. The universe, in such a case, would be a mere chaos of sensations.

In order that things may be associated, they must first be discriminated, otherwise, as Professor James has shown, in his chapter on Discrimination and Comparison, they are thought of, not as associated things, but as one thing. In like manner, when discriminated things have once been associated, the tendency is, in the absence of contrary experience, to think of them as belonging together. A child, attracted by the brightness of the teapot, touches it and burns his fingers. He naturally expects the teapot to be hot the next time he sees it. He is told that his Christmas gifts were brought down the chimney by Santa Claus. Until the statement is contradicted, he believes it. Why should he not? Or the association of things in the mind may come about without any external suggestion. I remember that the first time that I ever heard a person snore, the thought came into my mind that the strange noise was made by a bear, and I lay awake most of the night, in fear of being devoured. The tendency is to think of things as related in the way in which they are first presented to the mind, until they come up in some different relation. This seems to be the explanation of the tendency to "believe as much as we can," to "affirm immediately the reality of all that is conceived," of which Professor James speaks. With increased experience, we find that there is a difference in the uniformity of associations, and accordingly the coincidence of two or more things is associated with the doubt whether or not the association is a constant one.

3) In addition to the relations considered above, there are some which, although expressed in terms of association and comparison, seem to me to have a different origin. That the whole is greater than any of its parts is a relation of comparison; that a thing cannot be in two different places at the same time, that every event

has a cause, that there is an external world, are relations of association. Although they do not arise independently of experience, they contain more than is given in experience, and the uniformity and firmness with which they are believed can, it seems to me, only be accounted for by the assumption of an innate propensity to look upon things as related in these ways.

So far as I am able to judge, beliefs always arise in one or another of these three ways. But a still more interesting question, from the practical point of view, than that of the origin of beliefs, is that of the comparative validity of the various grounds of belief. Are they all of equal worth, and if not, is there any way of determining which are to be given the preference, or is belief, like taste, a matter about which "*non disputandum*"?

Professor James does not go very deeply into the discussion of this question. As we have seen, he assigns to sensation the greatest efficacy in producing belief, and discusses the comparative power of various sorts of sensations in this respect. Emotion he makes a close second. But the question which gives us the more reliable information, in cases in which they conflict, he does not discuss at all. As a matter of fact, there is no doubt that a man under the influence of strong emotion often draws different conclusions from the evidence of his senses from those at which he would arrive in its absence. Is he warranted in doing so? Would any degree of personal interest warrant a man in believing or disbelieving the doctrine of transubstantiation, the Newtonian theory of gravitation, the Mosaic or the Darwinian view of the origin of species? There is no doubt that belief on such subjects as these is influenced by our interest, real or supposed, in one or the other view, and perhaps Professor James would say that he deals with the working of minds as they are, not as we imagine that they ought to be, but the general knowledge that a class of considerations is reliable or the reverse is another thing that not only ought to, but actually does affect our beliefs, and the question of the method to be pursued in ascertaining the actual relations of things, of forming true beliefs instead of false ones, is one which hardly ought to be ignored in a discussion of the subject.

Referring to the three classes of relations already considered, it is, I think, evident that there are differences in the way in which they affect our belief. In comparison, the essential thing is the accuracy of the observation. One who has once fully comprehended the proof that the sum of the angles of a triangle is equal to two right angles, is as sure of it as he could be after any amount of experience. In comparing sensible objects, we may, it is true, find our belief confirmed by repetition, but this is only in case that we doubt whether the comparison was rightly made in the first place. That red does not look like blue, nor sweet taste like sour, we are as certain on one trial as a hundred. If we apply a foot measure to an object eight inches long, nothing can add to our certainty that they are not of the same length. In matters of association, on the other hand, a great deal depends on the uniformity of the association—the number of times that we have experienced

it without contrary experience. When I hear a crow, for instance, I believe that it is black, because all the crows that I have ever seen have been so. A sheep I assume to be white, but with a less degree of confidence, because black sheep are more numerous than white crows. In the case of a horse, I have no belief in regard to the color within a certain range, unless I have some means of knowing about the particular animal in question. If I were told that my friend had bought a horse, I should have no idea whether it was bay, or black, or white, or some mixture of these colors. If, however, I were told that the natural color of my friend's horse was green, I should be much more confident that the statement was false than if the same person should tell me he had seen a white crow, for the same reason that I should more readily believe in a black sheep than in the latter. In the customary use of the word, I might say I *knew* it was not so. In the case of intuitive judgments, experience has little or nothing to do with the strength of belief. The adult man is no more firmly convinced of the existence of something external to himself than the child, and, although he may come to doubt it on speculative grounds, he no more fails than the child to show by his actions that he has a practical faith in it.

In many, if not most of our beliefs, all of these elements are present. If I see an orange, for instance, I have the intuition of externality, the comparison with other oranges that I have already seen, and associations of internal structure, taste, smell, and the like. All of these, and very possibly some emotion, as, for instance, a desire to eat it, may arise, simultaneously or so nearly so as not to be distinguished in time, as parts of a single mental state.

There is one kind of association, of importance enough to deserve mention, of which Professor James makes no mention. The beliefs, or alleged beliefs of other people have an influence on our minds which is, I think, not inferior to that of emotion. The man who can, without misgiving, maintain an opinion which contradicts all that he learned in childhood and all that is held by those whose good opinion he most values is, I fancy, quite as rare as he who can suspend judgment in the presence of an emotionally exciting idea. Most of us take our religious, political, scientific, and practical beliefs at second hand, from the friends with whom we associate or the books and papers we read. Take a young man out of his home and put him, for instance, in college, and it will probably work a change in his moral standards, not necessarily for the better. At home, if he knew of a theft, or an assault, he would very probably be ready to bring the offender to justice, but if the offender is his classmate, and the sufferer a member of the succeeding class, he will very probably think it a more shameful thing to report the wrong than to do it. At the same time, he doubtless considers it utterly reprehensible that ignorant Italian peasants should feel in the same way about betraying their neighbors who are guilty of robbery or murder.

Coming now to the influence of emotion on belief, it will not, I presume, be disputed that it comes about by way of association. Professor James, as we have

seen, holds that "every emotionally exciting thought, in the natural man, carries credence with it." I suspect that this is true only in the sense that, in the absence of experience, not only every exciting thought, but every thought is believed. However this may be, in respect to the natural man, I think it is pretty certain that, in the case of such artificial beings as those who reflect on the causes of their emotions and beliefs, it will be found that in order for an idea to excite our emotions, a certain degree of belief is necessary. Professor James illustrates his position by the fact that a man can walk along a curbstone without any apprehension of falling, because the thought of falling awakens no emotion of dread, while on the edge of a precipice the emotion caused by the thought of the consequences of a mis-step may quite overcome his belief in his ability to keep his belance. But a chamois-hunter or an acrobat will pass along the same place without the slightest apprehension, not because he does not think of what would happen if he should fall, nor because he has more liking than any one else for being dashed to pieces, but because he has what the inexperienced man lacks, entire confidence in his ability to avoid the danger.

Since I began writing the last paragraph, a number of thoughts have passed through my mind, any one of which would be sufficiently exciting if I believed in them, as, that I may die within the next half hour; that I may fall heir to a fortune, and the like, none of which have produced any emotional disturbance, because I do not believe that there is any probability of their being true. Why was it that not only the medical profession but the public in general became so much interested, recently, in the announcement that Dr. Koch had discovered a substance that promised to be a cure for tuberculosis? Partly on account of the interests involved, but at least equally because his reputation was such as to inspire confidence in what he said. There are plenty of medicines advertised in the newspapers for which greater claims are made than Dr. Koch made for his discovery, which fail to arouse any such general interest. These examples are probably enough for illustration of the familiar fact that belief is the most common cause of emotion, and that a thought that is not believed is apt to leave us unmoved.

Nevertheless, it is a notorious fact that emotion has a great deal to do with determining the sort and degree of evidence which is satisfactory to us. Love and hate, respect and contempt, affect our beliefs in regard to the character of their objects in matters entirely independent of the qualities which originally inspired the feelings. We find it an easy matter to believe that a man whose religious or political opinions we think pernicious is a bad man in matters which have nothing to do with his opinions, and may find it almost incredible that one whom we like personally should think differently from ourselves on matters in which we are deeply interested. But what particular evil we shall believe of the person whom we dislike, or good of the one whom we like, depends entirely on circumstances. A man, for instance takes a dislike to a stranger on account of some lack of good manners. Whether he shall suspect him of being a clergyman or an infidel, a drinker or a

prohibitionist, a Sunday-school teacher or a gambler, or both, is likely to depend very largely on his own tastes and principles in regard to such matters. So, on the other hand, his views in regard to religion, temperance and gambling, are probably due in great measure to the practice of the people whom he likes. A woman who has been brought up with a horror of drunkenness hears that a man with whom she is violently in love is a drinker. She will probably disbelieve it at first, but if she becomes convinced of the truth of the report, she will very likely come to think that a drunkard need not be such a bad fellow after all. If there is any one thing that more affects our beliefs than what the people we like say, it is what they do.

In like manner, emotional states without any definite object, such as we call moods if they are transient, and disposition or temperament if they are habitual, color our belief, not by originating any definite propositions, but by making us receptive to those that tend to confirm them. It is not when a man is broken in spirit by repeated calamities that he is most ready to believe that "where there's a will there's a way," nor in the flush of youth, health and triumph that the doctrine that "all is vanity," comes home to his heart. In whatever way such states of mind come about, whether as a result of original constitution, or of experience, or of disease, they make the mind inhospitable to whatever does not harmonise with them. In the case of insanity, this disposition may outweigh the plainest evidence of the senses, so that a man may believe that he is rolling in wealth and luxury when he is destitute of the ordinary comforts of life, or that his wife and children are dead when they are present before his eyes. In a lower degree, most of us probably have experience of something of the sort in "fits of the blues," but while the general character of the belief may be decided by the emotional tone of the mind, its precise form is determined by the man's interests. Low spirits would not be likely, for instance, to effect a man's opinion as to the probable course of the stock market, unless he were in some way interested in stocks, and the view favored by his emotional condition would depend on the side of the market on which his interest lay. Beliefs which, in our ordinary state of mind, are not associated with any strong feeling, such as mathematical truths and the physical and chemical laws of matter, remain unaffected in all kinds and degrees of emotional disturbance.

It seems clear, then, that, as a matter of fact, emotions affect our beliefs through association. It is not difficult to see how this comes about. Emotions tend to perpetuate themselves. A man who is in high spirits will laugh at vexations which, if he were in an irritable frame of mind would seem intolerable. We allow liberties to our friends which would offend us in persons to whom we are indifferent. The same inertia of the mind which is shown in these cases offers a resistance to any thought that tends to disturb it. If I like a man and hate dishonesty, evidence that the man is dishonest calls up at the same time two contrary emotional states, which cannot subsist together. One of three things must happen; either the association of the feeling of liking with the person of the man, or of that

of repugnance with dishonesty, or of the quality of dishonesty with the man must be given up, or at least impaired. But the feeling of affection for my friend and that of hatred for the alleged fault are old established associations, while that of dishonesty with his personality is a new one, which, in order to find lodgement, must expel the original inhabitant. Although I may have formed no definite association of honesty with him, the difficulty is of precisely the same sort as if I had. In either case it is the breaking up of an habitual association.

Such being the way in which emotion affects belief, its value as a ground of belief must be determined in the same way as in other cases of association. If any emotion is so exclusively connected with some definite object that the one is never present without the other, we are warranted in inferring the existence of the object from the presence of the emotion, as Robinson Crusoe inferred from the human footprints on the sand that men had been there. As a matter of fact, there is comparatively little uniformity in associations of this kind. The same things affect different persons differently, and the same persons differently at different times. Our hopes and fears are sometimes realised and sometimes disappointed, and people to whom, on slight acquaintance, we feel attracted, often develop qualities of a different kind from what we expected as we come to know them better. If I am fond of money, and also of idleness, or of friendship, and also of having my own way at all times, it does not follow that taking my ease is the way to get rich, nor that always insisting on my own way is the course to make friends. The most, I think, that can be said in favor of emotion as a ground of belief is, that its existence presupposes the existence of some object adapted to excite it. Avarice may be said, in a sense, to prove the existence of wealth—if there were no wealth there would doubtless be no avarice—but not that a particular avaricious man will be wealthy. Fear implies the existence of harm, but not necessarily that harm is coming upon the one that fears. These are matters in which we can apply the test of experience to our beliefs, and it seems evident that emotion adds nothing to our knowledge. We know the things independently of the emotions they excite, and every one recognises that to expect a thing merely because we either desire or fear it is, in matters which we can test by experience, utterly fallacious.

But there are matters lying outside the range of our experience in regard to which it is often confidently asserted that our desires and fears are sufficient proof of their reality—a view in which I cannot agree. If it could be shown that we long for something of an entirely different kind from anything we have known, that might perhaps be an argument in favor of its existence, but such is not the case. The wish for immortality, for instance, is nothing more than the wish for life. Probably there are but few who would not rather have immortality without death than after it, but experience has at last convinced the most hopeful that this is not to be expected, and the search for fountains of youth and elixirs of life has few devotees. We want life, and we have life; we want happiness, and we know happiness, whether we ourselves have it or not, but to say that the fact that we want

more than we get of both is a reason for supposing that we shall ever have all that we want of either is to reason in a way which we should all see to be fallacious if applied to things of every-day life. I conclude, then, that the emotions which a belief excites are utterly valueless as a test of its truth, and that we may expect that, both with individuals and the race, emotion will play a smaller and smaller part in belief as true knowledge and culture increase. This is not saying that, in cases of doubt, it is unreasonable to hope that things may turn out as we wish.

As to innate beliefs, it is enough to say that we cannot altogether rid our minds of them, and that they answer perfectly the purpose of working hypotheses. A man may question the reality of an external world to his heart's content, but if he runs his head against a wall, or drops a brick on his toe, it will hurt him just as much as the most thorough-going materialist. The consequence is that such a doubt does not affect our conduct. Abstractly, these beliefs do not all impress us with the same degree of certainty. That the same thing cannot be in two different places at once, is, I think, felt to be more absolutely and necessarily true than that there is such a necessity in the order of events as is implied in the idea of causation, but for all practical purposes we are as sure of the one as of the other.

I have already quoted Professor James's assertion of our ability to choose which among different ways of thinking of the same we shall adhere to and which disregard. Perhaps the most prominent feature of his teaching on the subject of belief is that it is an active, not a passive state of the mind—a choice, not a necessity. One or two more quotations on this point will make this plain.

"As bare logical thinkers, without emotional reaction, we give reality to whatever objects we think of, for they are really phenomena, or objects of our passing thought, if nothing more. But, *as thinkers with emotional reaction, we give what seems to us a higher degree of reality to whatever things we select and emphasise and turn to* WITH A WILL. These are our *living* realities, and not only these, but all things that are intimately connected with these (p. 297).

"Now the important thing to notice is that the difference between the objects of belief and will is entirely immaterial, as far as the relation of the mind to them goes. All that the mind does is in both cases the same; it looks at the object and consents to its existence, espouses it, says it shall be my reality.' It turns to it, in short, in the interested emotional way" (p. 320).

Although the doctrine is stated, in these and other passages, without qualification, it is hard to reconcile it with some other statements. He devotes a chapter to "Necessary Truths," and says:

"We *must* attach the predicate 'equal' to the subject 'opposite sides of a parallelogram' if we think those terms together at all" (p. 617).

I do not know that it makes much difference whether we say that, in a case like this, we cannot think differently of the same, or that, having thought so, we cannot choose which way of thinking to adhere to and which to disregard. The proposition that a horse is a vertebrate animal cannot be called a necessary, *a priori*

truth, but I find it as impossible to think of a horse that is not a vertebrate animal as of a parallelogram with the opposite sides unequal. A figure with the opposite sides unequal would not be a parallelogram, and anything that was not animal and vertebrate would not be a horse. Whether the difficulty in the two cases is the same or not, it is clear that, by Professor James's admission, here is a restriction of our choice as to what we will believe.

Again, he speaks of pleasurable and painful sensations as "belief-compelling." Compulsion, so far as it exists, excludes choice, and if this expression is justified it implies another limitation on the freedom of belief.

With regard to painful sensations, it seems to me that the fact is that they, and their associations, force themselves on our attention, rather than that we "select, and emphasise and turn to them with a will." If I have a toothache, I may believe that if I retain the tooth it will keep me in pain for a long time, and if I have it extracted, that will also be a painful process. It does not seem to me that the expressions quoted above accurately describe my state of mind in regard to either of these beliefs.

According to Professor James, when a man becomes convinced that he is financially bankrupt, or that he has lost his good name, or that he is suffering from an incurable and fatal disease, it is because he "espouses" this view of the matter, "consents to its existence," says "it shall be my reality." This notwithstanding that such a belief may drive him to determine that, so far as in him lies, all existence, all reality shall cease; to consent to death and espouse the grave. Would not the criminal who hears his death-sentence pronounced prefer, if he could, to disbelieve his eyes and ears, and to feel that it was all a bad dream? So far as I can judge with regard to many unwelcome beliefs, they are not like the highwayman who offers the alternative of "your money or your life," but like him who throws you down, binds and robs you without offering any choice.

Perhaps the most striking example of the view under consideration is found in a foot-note on p. 318, in which, after quoting, with approval, a statement of Royce that "The ultimate motive with men of every-day life is the will to have an external world," he goes on to say:

> "This immixture of the will appears most flagrantly in the fact that although external matter is doubted often enough, minds external to our own are never doubted. We need them too much, are too intensely social to dispense with them. Semblances of matter may suffice to react upon, but not semblances of communing souls. A psychic solipsism is too hideous a mockery of our wants, and, so far as I know, has never been seriously entertained."

Leaving aside the question whether any one who really disbelieved that there was any reality, outside of his own mind, in objects of sense, could believe in the existence of that which he only infers from the conduct of those objects, it seems to be distinctly stated that the reason of these beliefs is, not that we cannot help believing so, but that we choose to believe so, and not otherwise, and that we are

able, having so chosen, to believe as we wish. That there may be no doubt as to the sense in which the term "Will" is used, I will quote the explanation with which he opens his chapter on that subject :

"We desire to feel, to have, to do, all sorts of things which at the moment are not felt, had, or done. If with the desire there goes a sense that attainment is not possible, we simply *wish;* but if we believe that the end is in our power, we *will* that the desired feeling, having or doing shall be real ; and real it presently becomes, either immediately upon the willing or after certain preliminaries have been fulfilled" (p. 486),

Now each one must judge for himself whether this, or anything like this is the way in which he came to believe in an external world. Judging from my own experience, I should say that the reason we originally have such a belief is that it arises spontaneously in our minds, and that, for a long time, it never occurs to us that it can be otherwise. However that may be, I am certain that when the contrary possibility was presented to my mind, it struck me as strange, rather than dreadful, and that I firmly believe many things that seem to me far more hideous than the doctrine that I am the universe. So far as society is concerned, if I can *be* Shakespeare and Milton and Goethe, Plato and Bacon, Newton and Darwin, Luther and Columbus and Washington, as well as all the people of my acquaintance, it strikes me that I can be pretty good company for myself. To use the universality of the belief as a proof of its voluntary nature seems to me very much such an argument as to say that because all bodies attract each other in the ratio of their mass and inversely as the square of the distance, the falling of a stone must be a purely voluntary matter. I do not see what stronger argument, in a case like this, could be made for the necessity of a belief than the alleged fact that no one, under any circumstances, is free from it.

Now, if we substitute the term "Propensity" for "Will" in the passage quoted above, it would seem to me an entirely accurate description of the facts, and I can only understand how the authors quoted could take the ground they do except on the assumption that all propensities, or at least all which prevail, are choices or volitions. That such is not the case seems to me clear enough in regard to belief from some of the instances which I have already mentioned, but it will perhaps be still more evident from cases in which belief is not in question. The propensity to remember and constantly think of painful and distressing things, which we would gladly banish from our thoughts, or such things as silly rhymes and trifling tunes ; to tremble and lose our presence of mind in danger, when we have most need of the full use of all our faculties ; to express our emotions by muscular movements when we wish to conceal them, and many others that might be mentioned, are examples of the fact that an invincible propensity may be quite the reverse of a choice.

That belief is an activity of the mind may be freely admitted. The mind—whatever the substratum of our states of consciousness may be—is not a receptacle,

to hold indifferently whatever may be poured into it nor a sheet of blank paper, on which this or that may be written by circumstances; it has a character of its own, and reacts to its environment. What the reaction shall be depends both on the character of the mind and what is presented to it, but it seems incorrect to assume that all the dispositions of the mind are of the nature of desires or aversions. In the last analysis of which we are capable, our character is probably due to our physical constitution, original and acquired, and our beliefs may be profoundly affected by a few glasses of whiskey or an attack of fever. Whether the reactions of the matter of which our brains are formed are as invariable as those of inorganic matter need not be discussed here; the present point is that while belief is a sense of the relations of things as they are, the essence of will is the desire to have them otherwise than as they are. To make belief a matter of choice is the same as to say that I may at the same time choose that things shall be as they are and otherwise.

Professor James closes the chapter with a practical observation:

"If belief consists in an emotional reaction of the entire man on an object, how *can* we believe at will? We cannot control our emotions. Truly enough, a man cannot believe at will abruptly. Nature sometimes, and indeed not very infrequently, produces instantaneous conversions for us. She suddenly puts us in an active connection with objects to which she had till then left us cold. 'I realise for the first time,' we then say, 'what that means!' This happens often with moral propositions. We have often heard them; but now they shoot into our lives; they move us; we feel their living force. Such instantaneous beliefs are truly enough not to be achieved by will. But *gradually* our will can lead us to the same results by a very simple method; *we need only in cold blood act as if the thing in question were real, and keep acting as if it were real, and it will infallibly end by growing into such a connection with our life that it will become real.* It will become so knit with habit and emotion that our interests in it will be those which characterise belief. Those to whom God and Duty are now mere names can make them much more than that, if they make a little sacrifice to them every day. But all this is so well known in moral and religious education that I need say no more" (p. 321).

The above passage seems to me to illustrate at the same time the force of Professor James's rhetoric and an occasional tendency on his part to be carried away by it into statements that are altogether too sweeping. In an immense proportion of cases, the method that he recommends is precisely the surest way to convince ourselves that the thing in question is *not* real. It is the method which the small boy takes to convince himself that the gun is not loaded; the drunkard and spendthrift to satisfy themselves that their vices will not bring them into poverty and disgrace. A man may sit all day at the fork of the road, and believe that the broad way does not lead to destruction, but when he puts his belief in practice he discovers the truth. So far as practical matters, capable of being brought to the test of experience, are concerned, it can only be said that *if they are real*, we shall convince ourselves that such is the case by acting as if they were real. Doubtless Professor James had not such prosaic things as these in mind when he wrote the pas-

sage, but a method that will not serve us in regard to such questions as whether water will wet us or fire burn us, can hardly be called infallible. But even in regard to questions that must always remain matters of opinion it is not true in the unqualified sense in which Professor James puts it. Probably many men, brought up in the belief that it was their duty to observe the first day of the week by religious worship because the Hebrews were required to abstain from labor on the seventh day, have come to modify their belief without any material change in their practice, and even the belief in regard to the nature and attributes of God may be affected in advance of a change in the conduct based upon it.

The law of association in this regard is subject to the same limitations as we have already found to hold in respect to other matters. Associations of action with belief have a tendency to strengthen it, but, as in the case of emotion, they may be overcome by other considerations, and it is entirely possible for a man to go on for the better part of a lifetime in punctilious conformity to usages which in his heart he despises, and break ont in open rebellion at last. From the ethical point of view, the advice which seems to be implied, of deliberately choosing a way of setting doubts at rest which is as efficacious on the side of error as of truth, of vice as of virtue, seems to me, to say the least, of doubtful tendency. We must often act in doubtful cases, and take the risk, amongst others, of thus confirming ourselves in error, but certainly there can be no more solemn motive for weighing well our beliefs before committing ourselves to them by action than the fact that we may, by habit, pervert our moral sense, blind our judgment and stifle our conscience.

To the man who believes that there is a universe, of which he forms an infinitesimal part, and that all his interests depend on his attitude toward the power that works in it, it is of infinitely more interest to know how he can know the truth than how he can convince himself of this or that. Shall truth be our master, to be followed and obeyed, though he command us to give up all else that we hold dear, or our servant, to be employed as suits our passion or caprice, and dismissed when he will no longer serve our purpose?

This is perhaps the most momentous question that we are called on to decide. The man who makes the wrong choice may or may not attain what he seeks, but though he gain the whole world, he will lose his own soul.

W. L. WORCESTER.

THE NATURE OF MIND AND THE MEANING OF REALITY.*

Professor William James's supposition of "an hallucinatory candle" seen by a 'new born mind entirely blank and waiting for experience to begin" is an impossible and self-contradictory figment. We might as well speak of the dry Niagara falls employed in the manufacture of some material goods out of nothing. For, first,

*This article was suggested by Dr. W. L. Worcester's criticism on Professor James's Psychology. When Dr. Worcester discusses Professor James's supposition of an hallucination in a

a mind entirely blank is no mind and, secondly, a blank mind if it could exist at all, would have no hallucinations. An hallucinatory candle can be produced only out of the memories or the combination of memories of former candle-sensations. A blind man sees in his dream no colors, and a deaf man hears no symphonies.

A new-born babe is already in possession of many inherited memories. Thus the first sense-impressions after the babe's birth find the organism, especially its skin, nerves and muscles predisposed for their reception. The babe's organism accordingly presents an instance of a relative but not of an absolute blank; an absolute blank of a something that is to develop into mind can mean only a lump of sentient matter at the moment of formation. As soon as it is formed it is exposed in every second of its existence to innumerable impressions which fill the blank with contents and these contents are the mind that is developing.

Sentient substance is not at rest, but like a flame it is possessed of an incessant activity. The form of this activity is both extraordinarily plastic and stable. It is plastic, for every impression together with the reaction of the impression modifies it and leaves a trace: it is stable for the traces of all the impressions and reactions are preserved.

The first sense-impression of a lump of sentient substance produces an irritation which objectively considered is a commotion of the sentient substance and subjectively considered a feeling, the substance being sentient *ex hypothesi*. This first and primitive feeling is meaningless, for it has not, and cannot have, any reference to any other feeling, memory or mind, and meaning is created through the interaction of feelings with memories of feelings.

Some later sense-impression of the same kind will not only produce the same irritation but also serve as an irritation to awaken the memory-trace left by the former sense-impression. The new feeling will melt into one with the reawakened memory of the former feeling. In the long run many traces of the same kind which are, as it were, deposited in the same place will constitute an organ predisposed to receive the correspondent impressions; and now a sense-impression received by such an organ may be called a sensation. A sensation is not merely a feeling, it is a feeling of a special kind and it is felt to be of a special kind. In other words, a sensation is a feeling that has acquired meaning; and this meaning is the product of the interaction and coöperation of feelings and memories. Sensations have become symbols representing the cause of the sense-impression which produced the sensation, and ideas are symbols of a higher order representing either whole classes of a certain kind of causes of sense-impressions or certain features thereof, or certain relations among them.

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blank mind, saying that it would be "the only possible reality of that mind," he almost seems to adopt Professor James's views of the subject himself. Clearness about such fundamental terms as mind and reality, are so much needed that the following remarks may not be out of place as a further explanation of the subject. Exactness in fundamental and general terms will save much labor in detail work.

Thus every mind is a system of sentient symbols. These symbols being as it were pictures intended somehow to represent or allegorically speaking to portray things are called "ideas," while the things symbolised are in their totality called objective existence or "reality."

Considering the nature of mind, it is obvious that there cannot be an entirely blank mind. We might as well speak of an entirely blank picture. But an entirely blank picture is a canvas and no picture at all. That a mind which is not as yet a mind can have neither sensations nor hallucinations is almost self-evident. Similarly there is no sense in saying that a picture that consists of an utter blank and thus is properly speaking no picture at all but an empty canvas, either does or does not correctly represent a certain object.

The word "real" is used in two senses (1) as a name for everything that exists and (2) to signify that kind of existence which is the object of our sensory and mental experience, i. e. the objective world so-called. The former of these two definitions is more comprehensive; for it includes the realm of mentality, the ideal world of subjectivity. The latter is used in contrast to the subjective world of mental life and thus expressly excludes the ideal realm of the mind and of mental symbols.

The questions as to What is reality? and Is there anything real at all? must not be formulated as they are by Professor James, in terms of belief but in a statement of facts and by defining certain facts as real.

An hallucination is real in the first sense of the word; it is an actual existence; it is a feeling taking place in the mind of some organism. It is also real in the second sense of the word in so far as it is a vibration of a brain structure. However an hallucination is not real in the second sense of the word in so far as its meaning has not its correspondent analogue.

Let the meaning of a certain mental symbol be a candle, under which name we comprise a certain group of experiences, and let the cerebral structure of this mental symbol be awakened by another stimulus than that which is generally called a candle. Those experiences which as a group are called a candle are of a certain kind. If a piece of paper approaches the lighted candle, it will burn. An hallucinatory candle will leave the paper intact, although the person who has the hallucination may see the paper burn. Thus the ideas or images of objects are built up of experiences which have taught us that under certain conditions certain events happen; in consequence of certain actions there are constantly certain reactions taking place. Reality consists of such facts; it is the sum total of all reactions; reality is the nature of objects which react somehow.

Those who jump at the conclusion that our subjective sensations, such as colors, tastes, sounds, etc., must be regarded as objective properties of things, are grossly mistaken. Our sensations are not qualities of things but subjective phenomena; they do not inform us about the nature of things, but reveal to us how things affect our senses. Those however who deny or doubt objective existence are no less

mistaken. The world is not a subjective phenomenon of sensations, but an objective existence symbolised in sensations.

The question is not "Does reality exist?" but "What is Reality?" or "What is the meaning of 'real'?" When we say "Objects are real," we mean that they resist, they react, their presence produces somehow some effect. When we say, We ourselves are real, we mean that we react upon the objects with which we come in contact, we mean, that in our bodily existence we are objects in an objective world.

Actions and reactions are taking place. This is a fact. He who denies it is like the man who declares that he is not at home; he contradicts himself: for the denial of a question is a reaction upon an action. The term reality is the symbol of the nature of actions and reactions in their efficacy, it denotes the essence of facts and thus the question "Does reality exist?" has no sense. We denote that which exists, that which acts and reacts, that which is a fact, or howsoever we may express it, by the word "reality." We might deny that the reactions of the objective world are constant, or that a certain idea of a certain reaction is erroneous, viz. that the reaction if put to the test would prove to be different from what it was expected—but all these denials and doubts which are of daily occurrence in the domain of science presuppose that there are reactions taking place and reality or objective existence is only a collective name for these reactions and their nature. The name object still preserves the idea of reaction, for object is that which reacts upon touch, which resists, which is objected.

We shall lose ourselves in inextricable confusion by making a matter of doubt and belief what is really a statement of facts. To speak of a doubt or belief in the reality of things in general is tantamount to speaking of a belief in our experiences which, whatever their particular nature may be, are facts. And to doubt our experiences, not the correctness of a particular experience, but experience in general, i. e. the very existence of experience is tantamount to doubting our own being.

A consideration of what we mean by an hallucination can best make clear what we mean, and rationally can only mean, by reality. A real candle is a mental symbol of something which will under certain conditions react in a certain way. An hallucinatory candle is also a mental symbol, but the thing which it purports to mean, does not exist; i. e. there is nothing that will react. The symbol is there, but not that something the existence of which the symbol of the idea "candle" would indicate.

This method of dealing with the problem of the old naïve realism and the pseudo-critical idealism of former times is not based upon the assumption of the reality of things (which means, of the reality of reality); it is simply a careful formulation of the problem to prevent our being entangled all about with contradictions; it is the method of rendering clear the basic principle of positivism, that all knowledge is a description of facts, which description of facts is made for the purpose of dealing with facts.

P. C.

MONISM NOT MECHANICALISM.

COMMENTS UPON PROF. ERNST HAECKEL'S POSITION.

Prof. Ernst Haeckel's Anthropogeny, the fourth edition of which appeared of late,* brings again into prominence that conception of monism which identifies the monistic view with mechanicalism.

A review of this book has appeared already in *The Open Court*, No. 231, in which we called attention to the great merits of a work which has become a household book, not only for the scientist, but for every educated reader who is interested in man and the origin of man. Our knowledge in Anthropogeny, certainly, will influence not only our general world-conception, but through our general world-conception it will extend its influence not only over every branch of science but also into the broader fields of man's daily life and his practical morality.

Professor Haeckel is the most popular naturalist of to-day and there is no one, perhaps, who has made a more effective propaganda for the monistic world-conception than he. So it is almost a matter of course that his definition of monism is generally accepted as the standard. We have formulated our view of monism in a way which in principle and general outlines concurs with the commonly accepted usage of the term, yet it deviates from it in some important points which are perhaps not merely matters of detail. It will be difficult to say how far we agree and how far we disagree with Professor Haeckel's monism because those subjects in which we disagree, have never been elaborated by him, and we are inclined to believe that he would modify some of his expressions, if he devoted a quiet hour's thought to the objections we have to make to his definitions.

Professor Haeckel's monism being mechanicalism savors strongly of materialism. He says in the latest edition of his "Anthropogenie" which is now before us, Vol. II, p. 851:

"There can be no doubt that a thorough consideration and unprejudiced de-
"liberation of these facts will lead to a decisive victory of that philosophical concep-
"tion which with one word we call monistic or mechanical in opposition to the
"dualistic and teleological. Upon the latter are based most of the philosophical sys-
"tems of antiquity, of the mediæval times, and also of the present time. The me-
"chanical or monistic philosophy declares that certain and immutable laws obtain
"everywhere in the phenomena of human life as much as in nature generally, that
"a necessary causal connexus obtains everywhere in phenomena and, accordingly,
"that the knowable world forms throughout a unitary whole, a monon. Monism
"moreover maintains that all phenomena are produced alone through mechanical

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* *Anthropogenie oder Entwickelungsgeschichte des Menschen.* Keimes-und Stammesgeschichte. By Ernst Haeckel. Mit 20 Tafeln, 440 Holzschnitten und 25 genetischen Tabellen. Vierte, umgearbeitete und vermehrte Auflage. Leipzig: Engelmann.

"causes *(causæ efficientes)* not through premeditated purposive causes *(causæ "finales)*."

And in the first lecture "The History of Evolution and Philosophy," (p. 15) he says:

"We shall clearly recognise in the following investigations how the most won-"derful enigmas of human and animal organisations, heretofore considered as in-"inaccessible, have become accessible to a natural solution through Darwin's re-"form in the doctrine of evolution by a mechanical explanation of purposeless "efficient causes."

In agreement with these views, Professor Haeckel regards the terms necessity and mechanicalism as equivalent terms. He rejects any kind of teleology, any kind of final causes, and also the freedom of the will. He opposes the so-called moral world-order as contradictory to the idea that the world is regulated by mechanical law and he adopts the latter to the exclusion of the former. All these points come out very strongly and clearly in Professor Haeckel's letter to the editor of *The Open Court*, where his view of monism is graphically presented in a concise tabular form.

We here reproduce this table from No. 212 of *The Open Court*, for the convenience of our readers:

MONISM.	FUNDAMENTAL CONCEPTS.	DUALISM.
Inseparable.	Matter and force. God and world. Soul and body.	As a matter of principle distinct entities.
Mechanicalism. Necessary evolution.	Life.	Vitalism. Teleological creation.
Universal (conservation of energy). Determinism.	Immortality. Freedom of will.	Individual. A person's will being absolutely free.
Causae efficientes. (Efficient causes.)	Causation.	Causae finales. (Final causes.)
Regulated by mechanical law.	World-order.	So-called "Moral."
Inseparable and subject to the same laws.	Inorganic and organic nature.	As a matter of principle distinct and subject to different laws.

Now we agree with Professor Haeckel in one main point, viz. "that certain "and immutable laws obtain everywhere in the phenomena of human life as much "as in nature generally, and that the knowable world forms throughout a unitary "whole, a monon." But we cannot agree to his proposition that "the wonderful "enigmas of organised life are accessible to a natural solution by a mechanical ex-"planation of purposeless efficient causes." We grant willingly that mechanical

explanations will serve for all motions that take place in the world; even the motions of the brain take place in strict obedience to the laws of molar and molecular mechanics. But a mechanical explanation is not applicable to that which is not motion. If it were applicable it would not be desirable, for it would be of no avail. Mechanical explanations are to be limited to mechanical phenomena. Feeling however is not a mechanical phenomenon, and an idea, being a special and a very complex kind of a feeling, or rather and more accurately expressed, being the special meaning of a very complex feeling, is not a mechanical phenomenon either. It is true that when a feeling takes place and when an idea is thought in the brain of an organised being, that a certain nervous action takes place. The nervous action is a motion and this motion represents a definite amount of energy. There is no theoretical difficulty, although there are almost insurmountable practical difficulties, in measuring the definite amount of potential energy that is changed into kinetic energy when a man thinks. Yet the brain-motion is not the idea and by a mechanical explanation of the brain-motion we have not even touched the problem of what the nature of the idea is, why ideas originate and how they act.

We know that Professor Haeckel when he so vigorously insists on mechanicalism, opposes those philosophers who believe that there are motions which cannot be explained by mechanical laws. We side with Professor Haeckel against any one who maintains that some motions are mechanical (molar or molecular) and others are exceptions to the laws of mechanics, representing a kind of hypermechanics. But we cannot admit the explanation by mechanical laws of non-mechanical phenomena.

Professor Haeckel speaks of purposeless efficient causes—*zwecklos thätige Ursachen*. He speaks of efficient causes, as excluding final causes. He is right in his objection to final causes as the term is commonly used. But while there are causes that are *zwecklos*, there are no causes that are *ziellos*. Every process of causation takes a definite course, it has a certain and definable direction. The end of this direction need not be a conscious aim, but it is an aim whatever it be, it is a *Ziel*. In this sense every efficient cause is at the same time a final cause. The gravitating stone has no purpose, yet it has an aim. So the evolution of organised life is a natural process having a very definite aim. And this aim of the evolution of organised life is determined by factors of a very complex nature. One of these factors is almost imperceptible at the beginning, but it is of a constantly and rapidly growing importance; and this factor is the psychical element that appears with organised life. This factor is nothing supra-natural, nothing extra-natural, and yet it is not something material or mechanical. It is this factor which in its highest efflorescence changes aims into purposes, and with this change it creates again a new factor of evolution which is the purposive aspiration to conform to the world-order and thus to advance the further progress of mankind. This aspiration is in one word called morality.

When we speak of a moral world-order we mean that such moral behests as were formulated in prescripts by Confucius, by Buddha, by Moses, by Jesus, and other moral teachers of mankind have an objective and immutable foundation in the nature of things. The mechanical law in the province of motions, the logical law in the realm of thought, geometrical proportions in mathematics, the regularity of natural laws, etc., form in our world-conception a part of this moral world-order. The laws of social life are not opposed to them but correlative.

The purpose of a man's action reveals his character, and the character of the man is his innermost nature. In an analogous way the aim of evolution and especially the aim of the evolution of organised beings reveals the character, the innermost nature of the universe. Psychic life is absent so far as we can see in the primordial world substance as it appears in the form of a nebula; it is absent still in the primordial state of planets. It appears with the subjective states of awareness that rise into existence in organised life. The subjectivity of unorganised matter is, in comparison with man's subjectivity, to be considered as a blank; i. e., if there is in it a state of awareness, which we have reasons to doubt, it is apparently without meaning; it does not symbolise external objects; it is no mind; it is, as it were, blind. Yet the aim of evolution being the development of psychical life, shows that the subjectivity of unorganised matter is spiritual in its innermost nature. And the aim of psychical life being the development of moral ideals, we are very well justified in speaking of the world-order as moral. When speaking of the world-order as moral we mean that the moral prescripts of the great ethical teachers of mankind are founded in and derived from the world-order of nature.

There is one objection to calling the world-order moral, and we therefore dislike to use the phrase. It is this: Morality means conformity to a certain standard. The standard is not moral, but those who do or do not conform to it are moral or immoral. Therefore if there is any truth in the idea of God it is this that there is a standard for human conduct to conform to, there is an authority which has to be obeyed and this authority is God. To speak of God as moral or immoral is anthropomorphism. If "God" means anything, it means that power of the world-order obedience to which is called morality. If we say God is moral, God ceases to be God, the moral authority above him to which he has to conform would be the really true God. Thus logically the personal conception of God leads to a superpersonal conception of God.

These are in brief our objections to Professor Haeckel's definition of monism as being identical with mechanicalism and perhaps also with materialism. My opinion that Professor Haeckel may after all accede to our view of monism is based upon an interesting and friendly conversation which I enjoyed with him several years ago in Jena. Professor Haeckel is not the one-sided naturalist that he is often represented to be by orthodox clergymen. He does not see the workings of the natural laws only, he [illegible] o the moral aspect to which a consideration of the natural laws leads. That [illegible] emphasise the former without entering into the problems of the latter is

explanations will serve for all motions that take place in the world; even the motions of the brain take place in strict obedience to the laws of molar and molecular mechanics. But a mechanical explanation is not applicable to that which is not motion. If it were applicable it would not be desirable, for it would be of no avail. Mechanical explanations are to be limited to mechanical phenomena. Feeling however is not a mechanical phenomenon, and an idea, being a special and a very complex kind of a feeling, or rather and more accurately expressed, being the special meaning of a very complex feeling, is not a mechanical phenomenon either. It is true that when a feeling takes place and when an idea is thought in the brain of an organised being, that a certain nervous action takes place. The nervous action is a motion and this motion represents a definite amount of energy. There is no theoretical difficulty, although there are almost insurmountable practical difficulties, in measuring the definite amount of potential energy that is changed into kinetic energy when a man thinks. Yet the brain-motion is not the idea and by a mechanical explanation of the brain-motion we have not even touched the problem of what the nature of the idea is, why ideas originate and how they act.

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natural for a scientist, but he personally is certainly even broader than are his books, and I should say that his very opposition to certain errors which have been foisted by an antiquated dogmatism upon our religious institutions, show the deeply religious spirit of his character. P. C.

MR. CHARLES S. PEIRCE ON NECESSITY.

Mr. Charles S. Peirce is one of those thinkers who in the investigation of a subject go right down to the bottom of the problem. This appears to me the more conspicuously so, as the result to which his investigations lead stand in a strong contrast to my own views. Yet I cannot help admiring the boldness of his trenchant critique which finds the difficulties at the point where really the main difficulty of all philosophical inquiry lies buried. It lies buried, i. e. it does not appear on the surface of things. If it lay on the surface, our most superficial thinkers would naturally light on it; but most of them walk their way in peace, unmolested by the question, Is there any truth in the idea of necessity. An editorial treatment of this problem may be expected in a forthcoming number of *The Monist*. P. C.

BOOK REVIEWS.

EINLEITUNG IN DAS ALTE TESTAMENT. By *C. H. Cornill*, Professor at the University at Königsberg.

When Darwin and his followers first gave to the world the astonishing results of their studies, few were those who at once recognised the importance of the new theories and still fewer those who readily accepted them. But within the last thirty years, gradually but steadily the number of those who have adopted as virtually true the hypotheses of the new school, has been increasing until to-day those are in the minority who teach a view different from Darwin on the origin and evolution of the universe. The history and fate of the new studies in Biblical criticism bear a striking analogy to the reception accorded to Darwinian researches. At first they were met with well nigh universal opposition. They were declared to be subversive of the holiest interests of religion. They were held to rob the Bible of its glory. But by slow degrees the first passion yielded to wiser counsel. Curiosity led to the examination of the new positions; and in consequence in ever widening circles the conviction gained ground that far from taking away from the dignity of the old Hebrew literature, these new investigations and the method upon which they footed, lent new lustre to the collection of ancient writings. And to-day the battle has been won by the school of Wellhausen and Kuenen. Few are those who to-day urge the old views on the authorship date and historical succession of the several parts composing what is called the O. T. or even on the canonisation of the whole collection.

The startling assumptions of Wellhausen, Graf, and their Dutch colleagues had their forerunners, as had Darwin and Wallace. But when George and Vatke in the fourth decade of our century and Reuss, in his first academic lectures, virtually anticipated the lines of research of their later successors, the world was too busy with other matters to give their labors much attention. (Cfr. this work, p. 8.) For all this, primitive orthodoxy had only few representatives in this domain, at least in Germany. While Hävernick and Keil and Hengstenberg, are ranged on the extreme right of the line defending with all the resources of a vast erudition the traditional views, the middle ground is occupied by such men as Ewald, and Hitzig,

and the teacher of these De-Wette, a school of critics that to-day yet counts among its protagonists such men as Dillmann and Schrader and Kittel. With Graf a new era may be said to have begun for Biblical criticism. Notwithstanding the violent opposition encountered, the school has won the day. Its greatest triumph was perhaps the acquiescence in its positions shortly before his death by that master of Biblical science, Professor Delitzsch of Leipzig. What the cardinal point of contention is between the warring camps, is well known. It is the relative age and position of what is technically designated as the Priestly code, in the Hexateuch. According to the new school this portion is the capping stone of the edifice, as it were. For Dillmann it is pre-exilic; for Wellhausen post-exilic.

The book before us places itself without equivocation on the standpoint of this latest criticism. It is thus another leaf in the laurel wreath crowning the men of the new dispensation. For the name of the author is guarantee of the scholarly character of the work; and views which have the endorsement of a man of the renown and the scholarship of Professor Cornill carry the presumption of having truth on their side. Professor Cornill is however, a new comer in this special field. His life work, as he himself says, lies in another province of the vast realm of Biblical critical studies. His fame is associated with his critical edition of the text of Ezekiel, a work which will forever stand as the best guide for all who would venture on the dangerous ground of conjectural textual emendations. For Cornill was the first to lay down the method which above all must be followed in so venturesome a task and his new version is the classic illustration of the correctness of his method of proceeding. That a man who has established for himself the reputation of being methodic and painstaking almost to a fault, a man who is dowered with critical acumen of the highest order, should after going anew over the whole ground cast the weight of his scholarly authority in favor of the views of the new critical school is a fact the significance of which cannot be blinked. We are indeed glad that the publishers entrusted this number of their intended series of manuals for theological students, to a scholar who had hitherto not written *ex cathedra* on this particular subject. Thus was ensured a new and impartial examination of all the points involved.

The ends which this series of manuals is to serve, decided of course the style and scope of this work. Of introductions *(Einleitungen)* to the O. T. there was no scarcity; but (see preface), they were either too bulky and too full and thus did not answer the requirements of the student, not yet a scholar; or they were too brief, mere "ponies" as we here in America would say, intended to be learnt by heart for the purpose of passing a good examination. The difficulty thus consisted in combining thoroughness with the necessary brevity without sacrificing lucidity. No mere results on the other hand were to be stated. The student was to be initiated into the course of the investigations, the reasons for the conclusions and thus his interest was to be awakened and the way prepared for independent research on his own part. That the author has succeeded in carrying out this his programme,

every section of the book confirms. His fear that the full analysis in paragraph 12, of the priestly code will be found to be out of place in an "outline of this kind" is groundless. We do not hesitate that this very section is the gem of the whole work full as it is of numerous passages which cannot but stir to profitable reflection the student. None can lay this book aside without confessing that he has gained a "Gesammtanschauung," an insight into the unity and coherence of the new views, apt to convince all earnest and unbiased minds of the truth that in this science *(Wissenschaft)* criticism is standing on firm ground. In the selection of the books named at the head of each chapter, or in the course of the discussion, the Professor has displayed most consummate skill. There is scarce one important work which with profit may be consulted but is mentioned; and what is more in the right connection. This feature is not the least valuable in the whole work; the student thus has at ready command a bibliography which excludes the chaff and stores the wheat.

But let us dwell a little more specifically on the plan and execution and the contents of this book. Two plans may suggest themselves to the writer of an "introduction" of this kind. He may attempt to give a picture of the rise of literature among the ancient Hebrews and treat of the different writings which have come down to us, often the fragments of larger works, in the order of their composition and at the same time connect with this discussion the reasons for departing from the traditional views as to their dates and so forth and for assigning them to a new age. This would be virtually writing a history of the literature. It is this plan which Reuss adopted. But according to our Professor, investigation has not proceeded far enough to make such a history possible. He even doubts whether it ever will (p. 2). Perhaps his verdict is justified. At all events he is right when he urges that in such a sequence much which belongs to the branch which he is to teach, will scarcely find its proper or organic place. And therefore it was a wise conclusion of his to adhere to the second plan, the traditional. for such *Einleitungen* which treats of the different books in the order of the Hebrew canon and finally takes up the discussion of such questions as the collection of the canon, the condition of the text, the different ancient versions and their value for the reconstruction, if possible, of the true original. But what is an *Einleitung?* It is that theological "discipline" which concerns itself about holy scripture as a book. It is its business to fix the time when and the manner how the several writings were composed, which now collectively form the holy scriptures, again it is one of its main objects to understand at what period and under what conditions the several writings were collected and also the manner of the tradition of this collection down to us. The method of this inquiry can be none other but the historic critical. To this definition of the character of this discipline, to retain this German name, none will take exception. It is both succinct and complete. The second paragraph gives a full survey of the history of the studies in this field. It covers within the brief space of ten pages the results of scholarly labors extending over a period of over fourteen hundred years. It is not a dry enumeration of names and book titles. Under each scholar, the salient ele-

ment of his contribution is emphasised. The living principle of these studies is thus illustrated in its growth and successive development. Take for instance this description of Wellhausen's method, and in a similar manner that of all other predecessors or co-laborers is brought out: "At the hand of the history of the cultus and that of tradition, he shows how these two lines of development run parallel to each other, how the religious process of evolution at every halt and turn finds its expression and at the same time its corroboration in the productions of literature: Israel and Judaism are two concepts radically different from each other; it is the canon that differentiates Judaism from old Israel." Paragraph three states the author's reasons for treating the single books first before taking up the discussion of their collection into a canon, and also why the apycrypha are excluded. These not being in the canon, are foreign to the purposes of an introduction into the canon books. None will deny that the Professor's arguments on these points are irrefutable. His inquiry into the age of the art of writing among the Hebrews concludes this general preliminary. He is of the opinion that as far back as the memory of the Hebrews goes, they were acquainted with this art as nowhere there is a sign that among them there was a dim recollection of an analphabetic period. Recent finds have made it plain that during the reign of the Pharaoh of the exodus a lively correspondence was kept up between Palestine and Egypt, while for the reign of David the names of his court officials is documentary proof that there were writers at his court. The use of the pen must have been pretty general among the people as is shown by Judges viii, a chapter which belongs to the oldest layer of historical compositions.

Our space is too limited to abstract every chapter of this remarkable book. Much as we should like to do this, and especially as in this manner alone we can hope to do justice to its merits, we must confine ourselves, now that we come to the "special introduction" to a few selections taken from the discussion of the main points in reference to books which have been the centre of critical study. The Pentateuch as is natural receives the lion's share of the author's attention. We have no hesitancy in saying that his is the best exposition of the modern views which has yet come under our notice. The Pentateuch cannot be the work of Moses; internal evidence, as already pointed out by Aben Esra, Hobbes, Peyrerius, and Spinoza, render the traditional assumption of Mosaic authorship untenable. But the Pentateuch cannot be the work of one author. The critical labors of one and a half century, sketched most skillfully, has made it plain that the Pentateuch has been "worked together" from four independent original writings, *(Quellenschriften)* a yahwistic work, J. an elohistic, E. a Deuteronomistic D. and a priestly which after Kuenen is denoted as P. On this general division the scholars are agreed, the relative age of the separate parts alone is yet under controversy. In paragraph seven an analysis is given of the first four books as assigned to the three sources. Deuteronomy occupies a position of its own. It is characteristically different in language and thought from the others; it is something essentially new and is in itself homogeneous. In the main Deuteronomy is the book of the covenant mentioned in II. Kings xxiii; this original

D. is now incorporated in chapters xii, xiii, xiv–xvii, where however certain verses and even parts of verses must be eliminated. Perhaps xxviii, or as Professor Cornill argues, something more succinct but of the same general nature, a curse, may have belonged to the original D. This must have been the book published under such extraordinary circumstances in 621. Who is its author? It presents itself as the work of Moses. But this is characteristic of the tendency of the age to take a great man as the father of a new literary production, a tendency which was perfectly well understood and was far above the level of a literary deception. Its early manifestation in D. is merely proof that even then Moses was among the people the lawgiver *par excellence*. The author of D. must be looked for in the circle of the pious who in consequence of Manasse's retrogression were bound all the more closely unto each other. In other words among the men of the prophetic party, who must have had influence also over certain priestly orders, for D. is a compromise and an alliance between the prophets and the priests. Besides these components of original D. the book contains in its present form additions and duplicates which partly are historical and hence are denoted by D.h, partly parenetic, hence D.p; but again in these are many later interpolations. For the particulars in this regard, we must refer to the work of Cornill itself. His analysis displays a keen eye and will on the whole be sure to be accepted as final. The date of D. being 621, what is the time of the other great sources of the present Pentateuch. It is clear that D. is acquainted with the "book of the covenant" Ex. xx, 23.–xxiii, 33. and with both Decalogues (?). Thus it was acquainted with JE. P. on the other hand is totally unknown. The historical portions of D. confirm this deduction from the legislative pieces. JE is clearly known to D. while of a knowledge of P. there is not the least trace. How far back of 621 may we go to fix the date of both J. and E.? The period of the first kings seem to be the limit, or more particularly the reign of David. But which of the two is the elder, J. or E.? There can be no question that J. is. For he is more naïve as appears from a comparison among others of chapters Gen. xx, 1–17. xxi 22–32 which belong to E., with chapter Gen. xxvi, 1–33 which is J.'s. E. appears to be a theological recasting of J. E. is the work of the Northern kingdom, Joseph always appears as the leader of his brothers and other features confirm this impression. The year 722, when in the Northern realm national consciousness was at its high water mark may then be supposed to be the *terminus ad quem*. But is E. as we have it a literary unit? Kuenen has proven that it is not. A century after its original composition a second edition so to speak must have been made with a view to meet the requirements and prejudices of the Judaic population of the South. Ex. chapters 32–33, are of great decisive importance in this connection. They are a rebuke for the golden calf worship at Dan and Bethel. Thus E. is divided again into two E.1 and E.2, to which come yet other later amplifications f. i. Num. xxi, 32–35, E.1 then belongs to the reign of Jeroboam II (750), and E.2 is the work of a later author living in Judah and under the influence of prophetic ideas. The locality of J. is a point of controversy. Cornill sides with those who maintain that his home is

the Southern kingdom of Judah. The incidents in the Patriarchal biographies which seem to weaken such an assumption are explained as original traits of tradition which J. had no interest to change. J. again is not a literary unit; it compromises J.1, J.2, and even J.3. The reasons for these subdivisions are clearly given in the book. J. must have been composed in its different parts between 850–625. The priestly code occupies a whole paragraph, the signal merit of which we have noticed above. This is indeed the master-piece of a great critical master. The many points which are involved in the discussion of this mooted problem are treated with a clearness and a calmness which carry conviction to the most sceptical. P presents a spiritual unity but not a literary. P. is the offspring of P.1 an old priestly record and P.2 a narrative and legislative composition which is as it were the substance and skeleton of P. around which younger accretions have gathered at different times for which Cornill in order to simplify his symbols proposes the designation of P.x. J. S. Vater as early as 1805 has proven that in the so-called Mosaism, of the influence in literary and legislative respect of our P. there is no evidence before the captivity. Wellhausen and Kayser and Kuenen have demonstrated what for Vatke was a dim suspicion. Dillmann, Kittel, and Delitzsch as little as Baudissin have succeeded in saving the pre-exilic character of P. Certain it is that before Esra 458 (444), this code had no official recognition. From Nehemiah we have the proof that our P. corresponds to the "Book of the Law of Moses" which was read at the great assembly in October 444. On the other hand the book of Chronicles is based on P. as it details history, as it would have been, if P. had been the law regulating life and and liturgy and temple service. Had P. been known before D. what reason should the priest have had who promulgated it to substitute for it another code less advantageous for his own order? P. is clearly a development of D. D. presents itself as something new in all of its demands, in its insistence on centralisation, in one sanctuary and in one priestly order on the legitimacy of the tribe of Levi exclusively. Of the tabernacle there is not one syllable in the whole of the pre-exile literature. It is a clear projection into antiquity of the Deuteronomic Central sanctuary. The relations of P. to Ezekiel make this still plainer. This prophet is the link of transition between D. and P. The omissions in the festal cycle of E. can only be explained that this prophet-priest was unacquainted with P. The captivity is thus the time for the composition of P. in the main. Its emphasis on circumcision as the sign of the covenant which decides the connection with the chosen seed and nation, is proof of this. And the chronology finally corroborates all previous inferences as the chronology of Genesis which is so important a part of P. is unmistakably a reconstruction after certain principles of the Babylonian history of the beginnings. (Oppert.) P. was written during the century from Ezekiel to Esra (570–458). It was not merely P.2 that Esra read before the assembled people. P.1 and P.2 seem thus to have been united even at this time. But it is not to be assumed that under Esra P. was already a part of the other portions of our Pentateuch. P. itself contains parts which are later than Esra. P.x is undoubtedly later and these additions

are easily explained on the very assumption of the official introduction of P. P. is not the work of an individual; it is that of a whole school, a school which naturally formed in the captivity. Besides these "source-writings," the Pentateuch contains smaller pieces of great antiquity mostly of a poetic character which had for a long time an independent existence. Such is Gen. xlix, Exodus xv, and others. Exodus xxi–xxiii, the so-called book of the covenant, requires also a treatment by itself. It is characteristic of this book that it ignores totally the Decalogue. Kuenen has solved the difficulties in which this collection of judicial precedents is involved by pointing out that it is the predecessor of D. D. is merely the substitute for this. As it is older than E. and is the precipitate of the unwritten law of the earlier kingly period, we place its date in the ninth century. Lev. xvii–xxvi while betraying in many regards affinity with P. is still distinct from it. It stands between Ezekiel and P.; it is one of the many priestly Thoroth which undoubtedly were current among the class whom they concerned. How now did these component parts finally combine? This is elucidated in paragraph fourteen. First J. and E. were put together, by an editor of Jehovistic leanings, whom Wellhausen has styled Rj. (R. standing for German Redacteur, Editor). This Rj. worked over, and that often decidedly, his materials in keeping with his own convictions. This Rj. probably lived about 650. His position is pre-deuteronomic. A second editor combined the work of Rj. with D. He is designated as Rd. His was the placing of the old book of the covenant near Sinai in order to gain room for Deuteronomy. He thus became the cause of much confusion. He lived during the second half of the Babylonian captivity. JED. was finally combined with P. by a third editor (Rp.) who is characterised by considerable reverence for the old documents. He omitted much to guard against repetition but at the same time where the relations differed he preserved them most faithfully and endeavored to place them into their proper position and connection. Rp. was thus virtually the author of our Pentateuch. But living after Esra even with him the Pentateuch was not yet closed. Many younger hands had a share in its final shaping. Glosses were added or crept into the text, as is shown by comparison with the lxx. The book of Joshuah is a necessary continuation and complement of the Pentateuch.

But here we must stop quoting in detail. Much as we should desire to reproduce Cornill's own words relating to other Biblical books, want of space precludes even the attempt. Suffice it to say that as in his treatment of the Pentateuch, so every question bearing on Biblical criticism is handled with the skill of the master. At whatever turn we ask information of this book we receive it most abundantly. This is indeed a student's book. It stimulates while it instructs. It leads while it describes the road passed over. In the discussion of the critical problems on the Psalms, the prophets Isaiah and Zechariah, on the final collection of the canon, the translation of the Bible and the relation of the different recensions to each other, the historical books as distinct from Chronicles, and Esra, and so forth, every point is treated with a lucidity of style and a fulness of material which is the rare gift of

a man who is saturated with his science and loves it for its own sake. This book is destined to rank among the classics. Its earnest study and repeated consultation can therefore be recommended to all who wish to inform themselves about the method and the achievements of the critical schools. The kindred book by Driver, recently published will not make a translation into English of Cornill's manual less desirable. We take leave from the author with a feeling of great gratitude for the pleasure and the profit we derived from his contribution to the literature of Biblical scholarship. The book is well printed and singularly free from typographical errors.

DR. E. G. HIRSCH.

THE PRESENT POSITION OF THE PHILOSOPHICAL SCIENCES. An Inaugural Lecture. By *Andrew Seth*, M. A. Edinburgh and London: William Blackwood and Sons. 1891.

As stated by the author, this lecture deals, not with the circle of the philosophical sciences, but only with the subjects traditionally associated with a Chair of Logic and Metaphysics in Scotland. These subjects belong to the threefold classification of logical, psychological, and metaphysical, or philosophical in the strict sense. They therefore embrace the study of the conditions to which valid reasoning must conform, the investigation, introspectively and otherwise, of the phenomena of consciousness, and the study of the twofold question of knowing and being, which as epistemology and metaphysics are included under the designation of Philosophy. These three lines of learning are cognate, and the first two are in a measure introductory to the third, or at least, says Professor Seth, if we go beneath the surface they lead us into the very heart of philosophical difficulties. The lecturer refers in his sketch of the present outlook in these three departments of science to the marvellous activity displayed in the department of psychology. All the influences at work may be said to meet and come to fruition in Mr. Ward's "masterly treatise" in the "Encyclopædia Britannica" and "the rich and stimulating volumes" of Professor James, of Harvard. Experimental psychology is now widely spread in Germany and has been enthusiastically taken up in America, "where every well-equipped college aims at the establishment of a psychological or psychophysical laboratory." Professor Seth thinks, however, that the experimental psychologists magnify their office overmuch. The field of experiment is necessarily limited to the facts of sensation, the phenomena of movement, and the time occupied by the simpler mental processes. The results are often so contradictory as to leave everything in doubt, and where definite results are obtainable, their value is often not apparent. Moreover, many of the results are of a purely physiological nature, and are only by courtesy included in psychological science. We would remark on this, that without the experiments the results would not have been obtained and that their value will become apparent when the methods of experiment are perfected. After referring to the critical function of philosophy as a doctrine of knowledge, Professor Seth states that as constructive it should lay special stress on a *tel-*

eological view of the universe. By this is meant, that philosophical teleology should concentrate itself upon the proof that there is an end of evolution, "that there is an organic unity or purpose binding the whole process into one and making it intelligible—in one word, that there *is* evolution and not merely aimless change," such as is supposed in a purely mechanical view of the universe. As to the nature of the end, although the lecturer accepts Hegel's view that all things are relative to man as rational, he cannot accept "the abstraction of the race in place of the living children of men." Ω.

DER MENSCHLICHE WELTBEGRIFF. By Dr. *Richard Avenarius*, Ord. Professor der Philosophie an der Universität Zürich. Leipsic: O. R. Reisland. 1891.

This monograph is as it were a self-confession. The author endeavors to attain clearness in his own philosophical standpoint. He looks back upon the path he has traveled and feels that "the solution of the problem attained is fundamentally a personal self-liberation" (Preface, ix). This book is most commendable reading to all idealists and agnostics. It is an interesting and instructive little work, tracing with a keen psychological criticism the vagaries of certain philosophical conceptions, through which not alone the author but the thinkers of mankind in general have strayed. The philosopher begins with what Avenarius calls the "natural world-conception." But this natural world-conception leads to contradictions and the evil spirit of speculation leads us in a circle through the barren fields of idealism. Avenarius asks: "Is the world really of such a nature that it appears unitary and "consistent only to the superficial thinker, while it leads every one astray who at-"tempts to grasp it more precisely in its entirety—the more so the more consistently "the thinker proceeds?" (p. xiii.)

The author proposes the question: "In what consists the inevitableness of the "contradiction to which every general world-conception seems to have led? Or, "if the world really be unitary what is the evil spirit that leads those astray who "hunger and thirst after a true cognition of the world?"

The author has entirely abandoned the idealistic standpoint, an inclination to which he showed in his first publication, "Philosophie als Denken der Welt gemäss dem Princip des kleinsten Kraftmasses." He says: "Doubt of the correctness of "my way heretofore pursued was induced through the barrenness of theoretical "idealism in the field of psychology; and yet cognition and experience should "belong to this science as psychological ideas."

The author in explaining the development of thought as it takes place in man proceeds in a personal way, so much so that every idealist ought to be satisfied. There are whole pages which teem with *ME*'s and *I*'s. The method of notation is what might be called American. Europeans often complain about our abbreviations, the Y. M. C. A., the S. A. S., the C. B. & Q. Ry., etc., which are great puzzles to the uninitiated newcomer. In a similar way Avenarius introduces such algebraic signs as *R* and *E*, which means reality and the sensations which our fellow-men are sup-

posed to have. M is Man, T is fellow-man. T_1 is the bodily appearance of T, it is R; while T_2 is the E of T, i. e. his soul or spirit. C is the nervous central organ, etc. Thus Avenarius says (p. 18):

"I can in a relative consideration assume R to be the condition of changes in "the E values, supposed to exist in M, only if M and in M the system C are parts "of my supposition," and in a note (p. 117) he adds:

"The skeleton in Goethe's poem, 'The Dead's Dance,' scents without an organ "of smell, sees without eyes, thinks without a brain; it also moves without muscles. "To consider such acts as true is now universally declared to be superstition. The "time will come when the assumption of psychical phenomena without the coör- "dination of the system C will universally be considered in the same way."

The first three chapters remind us very much of W. K. Clifford's article "On the Nature of Things in Themselves." But the article is nowhere mentioned and it is most probable that it is unknown to the author. If Avenarius had known Clifford's view, he might have presented his ideas with more economy of space. But if he did not know Clifford's article, the coincidences of procedure and to a great extent also of the result attained are the more remarkable. What Avenarius calls the E values are termed by Clifford "ejects," and the formation of ejects is called by Avenarius "introjection."

On page 52 we read the following sentence on the three phases of the cognition of the data of experience:

"The first phase alone, that of ingenuous empiricism, cognises, i. e. explains "the totality of these facts without the assistance of a non-sensible . . . . the second "that of ingenuous realism conceives the non-sensible as supersensible, and the "third, that of ingenuous criticism, as the pre-sensible. The epithet ingenuous has "reference to the foundation, not to the doctrinary system built upon it. That "which makes the said realism and criticism ingenuous is a survival of the ingen- "uous empiricism."

The theory which conceives the external cause of an experience as an object, effecting *in* the subject sensations, passes successively through the following views. The object is said to be (1) not within the range of experience, (2) not within the range of cognition, (3) not-existing. Thus it reaches *via* agnosticism its climax in idealism and "pure experience becomes a something that is never truly experienced, it becomes the totality of mere or pure sensations" (p. 62).

The third part of the pamphlet is devoted to "the restitution of the natural world-idea." Here the author comes, at least in some expressions, very close to the solution editorially upheld in *The Monist*. Avenarius says: "The task is . . . . to *describe* the what of my experience so as to make a practical application of it in my dealings with my fellow-men" (p. 79).

Professor Avenarius sums up his conclusions in the term "empirio-critical principal-coördination" which he defines as the inseparability of the ego-experience from the surrounding experience. "The ego and the surrounding belong in

the same sense to every experience. It is a co-ordination peculiar to all experience" (p. 83). If we understand Avenarius correctly he means to say, to express it in our terms, that there is no object but there is a subjective aspect of it, no subject but it appears objectively. Thus there is no subjectivity in itself and there is no objectivity in itself. This is exactly our position, which we call Monism.

The "introjection" was according to Avenarius the evil spirit that led speculation astray. To get rid of this evil spirit the proposition is made to discard "introjection" and replace it by the empirio-critical principal-coördination. But closely considered the latter is only an improved modification of the former, and this plan would better be characterised as discarding the error implied in that kind of introjection theory which assumes that sensations alone are given. The data of experience are not mere feelings, not mere subjectivity, as is maintained by the idealist; nor are they mere objectivity, as is maintained by the ingenuous realist; the data of experience are states of subject-objectness, they are feelings of a certain kind possessing objective significance, and the ideas subject as well as object are abstractions made in a late stage of mental development from this one inseparable whole of subject-objectness (see *The Monist* I, No. 1, pp. 78–79).

Avenarius says in a note (p. 132), "The question should not be 'Why do we believe in the reality of an external world?' but 'Why did we not believe that the external world is real?'" We should say that neither question is admissible. We should first ask: What do we mean by real? Reality is the sum total of our experiences, including the meaning of sensations and ideas, and finds its special application in their reliability. The question, Is the candle I see real? means, Does it react in special ways? Every name of a special object signifies a certain group of actions or reactions observable by the subject. This is what we *call* real and the idealist would have to deny the existence of his own experience to deny the reality of objects in this sense.

Avenarius's books are not easy reading to the English and American student, for his style is sometimes heavy and his constructions are involved. So are his thoughts. But his thoughts show the earnest thinker; the evolution of his views goes in the right direction and his works deserve the attention of his co-workers in the philosophical field. KPS.

DIE BEDEUTUNG DER THEOLOGISCHEN VORSTELLUNGEN FÜR DIE ETHIK. By Dr. *Wilhelm Paszkowski*. Berlin: Mayer & Müller. 1891.

Religion originates everywhere, according to the author, in the self-consciousness of man who feels himself an acting and willing being limited by and dependent upon greater and higher powers. The religious relation consists in the regulation of his actions as well as his will with reference to the ordinances of these powers. Dr. Paszkowski lets all the best known religions pass in review before our eyes, tracing

in all of them the connection between the properly religious elements and morality and singling out those religious factors which are most effective in determining man's will in a moral way. In the second part of the little volume he endeavors to show in how far the ecclesiastical organisation of religion in dogma and cult have strengthened and in how far they have weakened this result.

Concerning the most important dogma, which is the belief in immortality, Paszkowski declares that it had its undoubted effects favorable and unfavorable upon the social and moral life of mankind. It has prevented some crimes while it has enhanced others. The question is, he says, whether an individual immortality such as the religions usually picture it, is tenable or not. Modern science and anthropology seem to have proved it an illusion. Yet, as Paulsen says, the belief in immortality is not a mere imagination. Every reality and so also man's life is eternal. It is nonsensical to think of death as a finality. That which has been alive is a necessary, an eternal and inexpugnable part of reality and can never again be blotted out. Through death the continuance of a man's life is cut off, but the contents of his life can never again be annihilated. The real is in its very nature eternal. Paszkowski adds to Paulsen's remarks that man should find the norm of moral action in his relation to his fellowmen and posterity, so that morality need not depend upon any religious views. He will also have to act morally after he has resigned the belief in the reality of the beautiful immortality-dream as it is presented by enthusiastic religiosity.

It appears to us that if the usual conception of immortality is scientifically untenable it devolves upon the moral teacher to present an immortality conception that is tenable. The true immortality conception will never enhance crimes, it will always have a favorable effect upon the morality of mankind. Furthermore man's relation to mankind and also to the universe is of a religious nature. The social order to which man has to conform is one part of those powers a recognition of which constitute religion. If these powers are conceived to be outside the world we have a supernatural deity, if they are the highest, best, and greatest of, and in the world itself, we have an immanent deity and ethics still remains intimately connected with and dependent upon religion.

This it appears must be after all the author's meaning, for he says in prominent print, p. 89: "So long as there are men religion will not cease, for it is one of the "constitutional elements of human nature." "In the same measure as religion be-"comes spiritual, the moral conceptions also will be purified, the mere ceremonial "and the cult-element will lose their importance in religion" (p. 92). "To divide "the ethical factor from the religious, as a matter of principle, will be seen to be "impossible. We can only conciliate the one with the other, both having originated "out of the same source of emotions" (p. 90). κρς.

DAS WAHRNEHMUNGSPROBLEM VOM STANDPUNKTE DES PHYSIKERS, DES PHYSIOLOGEN UND DES PHILOSOPHEN. Beiträge zur Erkenntnistheorie und empirischen PSYCHOLOGIE. By Dr. *Hermann Schwarz*. Leipsic: Duncker & Humblot. 1892.

Dr. Hermann Schwarz treats the most fundamental problem of philosophy—viz. that of perception. He says in the preface: "There is a triple state of facts to which obvious yet strange as it appears to thought, the attention of the naturalist and the philosopher is drawn: the physical, the physiological, the psychical." The physical is the empire of mechanical motion that can be observed with great accuracy to take place everywhere. The physiological is the fact that when certain impressions produce mechanical effects upon the nerves, the result consists in certain sense-data; nervous action is accompanied with sensation. The psychical state of things exhibits the fact that whether or not we want it to be so, colors, sounds, odors, tastes, and touches are always referred to external things, never to the own internal states of the mind. Every one of these facts is strange in itself, for every one represents the contrary of what might be expected *a priori*. Who would expect that the machine-like world of jostling atoms and the glorious world of colors and sounds should have anything in common? And the sense-organs appear to the physiologist as mere physical apparatuses modifying the ether-vibrations somehow. We do not see on the one hand how consciousness can acquire information concerning the external world and on the other hand, how motions can develop something so heterogeneous as is consciousness. If we were confronted with one set of facts only, everything would be plain, but this triple set of facts produces a problem, it makes an explanation necessary and to this explanation Dr. Schwarz has devoted a careful investigation of some four hundred and odd pages.

Schwarz distinguishes two elements in what he calls "ingenuous realism," (1) its methodology and (2) its metaphysics. The methodology of physical science consists in arranging the sense-data, while the metaphysics assume that the objectivity of the sense-data is correctly represented as "things, qualities, and effects." Natural science arrived at a scepsis of the usual metaphysics of naïve realism by a correction of the ingenuous-realistic method, and Kant by critically investigating the background or frame of its theory of cognition. The question is, What is altered by physical science in the conception of ingenuous realism, what by physiology, what by philosophy and why?

In the consciousness of an ingenuous realist the data of touch receive a preference over those of the other senses, which is due to their greater stability. The color of an object disappears, the sounds cease, while the objects remain comparatively the same things to the sense of touch. Thus they are considered as the real objects having certain qualities which produce the phenomena of the other senses. This view is called by Schwarz the first methodological dogma of ingenuous realism. The second dogma is the conception that sense-data are considered as relatively permanent. So colors are conceived to exist objectively in the dark, an error which has

been sufficiently explained by Helmholtz in his "Physiological Optics," § 26. The third dogma completes the second; it is the view that the relative permanence or disappearance of the qualities of objects depends upon causes. Fire is said to be the cause which makes a wire red-hot. The ingenuous realist knows no reciprocal causation, no action and reaction, no *Wechselwirkung*. He assumes in addition to the objects certain force-beings which are regarded as the causes of all change. The sun is said to produce light.

Schwarz explains very well how this view of ingenuous realism naturally arises and also how in the progress of thought it naturally corrects itself. Suppose there were thinking beings with whom smell took the place of touch and sight, would not their world-conception be based upon the data of the sense of smell as is ours upon the data of mechanical motions? If the females of a certain butterfly *(Frostspanner)* are caught in the country and placed at a great distance in some house of the city, the males will be seen on the next morning in great numbers fluttering before the window of the room in which the females are kept. What a perfection of the sense of smell while the senses of touch and sight are very poorly developed! The dog owes his intelligence mainly to the development of the sense of smell. Would not beings whose intelligence is mainly due to the sense of hearing rather attempt to hear the world than to grasp or comprehend it,—to *behorchen* rather than to *begreifen?*

Ingenuous realism is not consistent, and its methodology leads to alterations of its metaphysics. We shall have to attribute either to all the sense-data objective reality or to none of them. The data of touch cannot be treated as exceptions and thus we have the alternative either to return from our scepsis to realism, not to the ingenuous but to a critically modified view of it, or to adopt the extremest form of idealism, be it that of Berkeley or the subjectivism of Fichte.

The author (not unlike Professor Avenarius in his book "Der menschliche Weltbegriff") takes the former view. He says in the concluding chapter *(Die Mängel der Ding-an-sich-Hypothese)*: "This view, viz. that of ingenuous realism, "will in the end of our inquiry be seen to be not only the most natural, and prac- "tically considered the most useful metaphysical theory, but also that conception "which is freest from all theoretical obscurities" (p. 381).

We believe that the book which contains much valuable material, would have been more useful than it actually is, if a chapter had been added containing a summary of the whole inquiry and delineating in great outlines the critically modified form of realism whose most appropriate name we should say is monism—not materialism or mechanicalism which allows all facts to be swallowed up by the conception that the world consists only of matter in motion, but that monism which is a unitary view of the whole, mindful of the fact that the sense-data as well as our concepts are one-sided aspects only of the one and all. If we bear this truth in mind we shall avoid from the beginning the three dogmas (alias errors) of ingenuous materialism.

KPS.

DIE ENTWICKELUNG DES CAUSALPROBLEMS IN DER PHILOSOPHIE SEIT KANT. Studien zur Orientirung über die Aufgaben der Metaphysik und Erkenntnisslehre. (Part II.) By Dr. *Edmund Koenig*. Leipsic: Otto Wigand.

The present work forms the conclusion of a volume published by Dr. Koenig in 1888, entitled *Die Entwickelung des Causalproblems von Cartesius bis Kant*. This same subject is here pursued in the history of modern philosophy since Kant.

The problem of causality, according to Dr. Koenig, has two aspects, an epistemological and a metaphysical. The pre-Kantian efforts dealt chiefly with the latter, the post-Kantian more principally with the former. The latter, the metaphysical question, is, How do things in the world of reality produce effects in one another? The former, or that which relates to the theory of knowledge, is, (1) What is the logical foundation of the idea of causality, what do we imply when we set up two objects as cause and effect, and (2) By what right and to what extent are we justified in imputing to the axiom of causality an objective validity? With respect to the latter, the epistemological, point of view, Hume and Kant believed they had established indisputably that experience as given does not furnish sufficient grounds either for the idea or the axiom of causality. On the other hand, others, like Maine de Biran, Schopenhauer, and Trendelenburg, hold, that causality is given us in experience, that we apprehend the causal relation subsisting between things, together with the things. Herbart maintains that the idea of the causal relation has been reached by the logical elaboration of experience in conformity with the general laws of logical thought. Mill and Spencer see in this idea an element that goes beyond experience, but justify it only psychologically, not logically. According to Lotze, Riehl, Wundt, v. Hartmann, Volkelt, the idea is either wholly or partly of intellectual origin. Finally, Comte and a few modern scientists look upon the idea of causality as logically valueless and scientifically superfluous

This is, in brief, the opinions of the greatest thinkers whom Koenig treats of, respecting the logical composition of the idea of causality. But another question, that namely as to the character of the relation in which in the causal judgment the notions of the concrete causes and their effects exist, is one closely allied with this. Some hold, (Trendelenburg, Goering, Herbart, Hamilton, Spencer,) that the relation is one of identity; others that it is synthetical. This aspect is also developed in connection with the last-named thinkers.

With respect to the axiom of causality, we find diametrically opposed to each other the doctrines of empiricism and apriorism; but a number of intermediate opinions have also established themselves. Of the first, Schopenhauer, Lotze, and Volkelt are representatives, but only the theory of the first-named is developed at length. The empiricism of Mill and Goering meets with exhaustive treatment, as does the opposed view of Laas, Riehl, and Wundt and the conciliatory view of Spencer.

With respect to the metaphysical aspect of the question, above-mentioned, we find the modes of conception of phenomenalism and realism opposed. The latter

only is, in the nature of its doctrine, required to explain ontologically the coming about of the causal relation in reality; the former does not recognise Being in itself, and hence there can be no causal connection of such. Schopenhauer's attempt (the view of the forces of nature as the emanation of a Universal Will), and the splendid ontological theories of Herbart and Lotze are regarded by Dr. Koenig as being no more a solution of the problem than were the efforts of their famous predecessors Spinoza, Malebranche, and Leibnitz. These dogmatic realists, as Koenig calls them, proceed from the assumption of the knowableness of the absolute; opposed to them, in this regard, are Spencer, Von Hartmann, and Volkelt, the critical realists, the first of whom gives an ontology that is a vague and metaphysical rendering of the principle of the conservation of energy, the two last of whom impute a transcendental ontological significance to the idea of causality.

The connection, Dr. Koenig concludes, is thus apparent and definite between the metaphysical and epistemological divisions of the question. The ontologist, unless he proceed dogmatically, must prove, that the notion of causality in the form in which critical analysis has established it as a valid and indispensable empirical idea, calls inevitably for the notion of an absolute reality and of a state of things in that reality corresponding to the forms of the connection given. Therefore, the logical analysis of the idea of causality is in any philosophy, pre-eminently determinative of its whole position and bearing.

On the whole, then, in the treatment of the problem forming the subject of this work, four comparatively independent views are found opposed to one another and considered in this opposition; viz., Sensualism and Intellectualism, Positivism and Rationalism, Empiricism and Apriorism, Realism and Phenomenalism. The author views the result of his researches to be, the proof of the untenability of Sensualism, Rationalism, Empiricism, and Realism, so far as this, by an historico-critical analysis, is possible.

This is but a brief sketch of the treatment pursued by the author. The author's own view has been barely hinted at. He is a Kantian. He calls himself a "transcendental idealist." Dr. Koenig's developments, appreciative, acute and pointed as they are, are too detailed and exhaustive to be separately taken into discussion here; but we may illustrate his point of view by a summary of a few remarks of his on the ontological problem as solved by physics. They are as follows.

The *natural* modes of thought cling irresistibly to the notion of a constant substratum; this being so, how does process, how does change spring from an invariability of existence? Physical science answers, by *force;* which exists as a constant potentiality of the substratum, is now active, now latent. Dr. Koenig maintains that in this physical science accomplishes nothing towards the solution of the present problem; it does not by its notion of force make intelligible the *acting* of bodies on each other, for when it comes to define the mode of action of force it involves itself in hopeless difficulties. What is the consequence then, of this dilemma of science, where it can neither render plain the "nature" of the material sub-

stratum, nor the nature of "force," which is, so to speak, the source of the activity of the substratum? It is either agnosticism, which places limits to our knowledge, and which Dr. Koenig rejects as unbecoming true thought, or it is that theory which regards the phenomena alone as real and views the concepts of theoretical physics as the mere shifts and helps of thought whereby we bring the phenomena into connection with one another. This latter view also Dr. Koenig cannot accept. His express contention is, that we can interpret, *ontologically*, the phenomena of reality by the notions of substance, force, etc.; he holds that the position of transcendental idealism is the correct theory here, the position namely that matter and force conceived as transcendent, independent entities cannot be *thought away*, because substantiality and causality are *forms* of transcendental apperception, which alone can make nature an object of cognition; matter and force must, for purposes of empiric observation, of necessity possess the same reality as phenomena themselves.

In connection with this subject Dr. Koenig contests Mach's doctrine, that natural laws are simple economical descriptions of phenomena; he contends that "law" is the foundation of natural science, and particularly so the law of causality.

This, however, does not say much. For the formal laws *in themselves* are empty. The law, the axiom of causality may, *a priori*, be without exception; but this circumstance, the *conviction* we may call it, offers us no hold on nature. When we investigate nature we have to perceive *definite facts;* about which we formulate particular laws or statements. The law of causality, however, does not help us to *discern* the determinative facts or features of any phenomenon. It simply says that *if* we have hit upon the determinative facts and formulated a law describing them, that law holds good throughout all nature. But what is to tell us *what* the characteristic and determinative features of a given event are and when we have lighted on them? The law of causality? Surely not. The law of causality cannot tell us that for falling bodies $v = gt$, i. e. that t is decisive. It simply says that when once this fact has been *discerned* it holds universally good. But it would have asserted the same thing with regard to Galileo's first (false) assumption, namely that $v = Cs$. If, then, the law of causality cannot tell us what those features are between which the causal connection is assumed to exist, what is to tell us? Our observation simply, which must be tested by experience. But our observation has no limits placed to it except this, that it shall select some fact that *represents* the phenomenon and best and most easily enables *us* to represent it. And there is nothing that requires that there should be only *one* feature or *one* aspect of an event by which it is representable; there may be several, as the development of science proves. Accordingly, what selection we make may depend on arbitrary and historical circumstances. And this, as we take it, is Prof. Mach's contention. If it is true, Dr. Koenig's criticism of Mach's view does not hold in its whole extent.

Dr. Koenig's treatment of the separate representative thinkers is exhaustive and in an eminent degree scientific. His work is distinguished by accuracy and

pointedness of characterisation, and by special knowledge of great range. It is a valuable contribution which he has given us, to the study of the theory of knowledge and metaphysics, and he has been true to his promise, as we judge, critically to discuss and not summarily to dispose of the opinions of others. *μκρκ.*

EINE NEUE DARSTELLUNG DER LEIBNIZISCHEN MONADENLEHRE AUF GRUND DER QUELLEN. By *Eduard Dillmann.* Leipsic: O. R. Reisland, 1891.

The author is an admirer of Leibnitz's monadology which he considers as "the most beautiful, most perfect fruit of philosophic thought and the most glorious system to be found in the history of philosophy." This enthusiasm however is not shown in panegyrics but in a careful investigation of the great master's work and we should scarcely know the attitude of the author toward the philosopher whose thoughts he discusses, if he did not give vent to his feelings in a few sentences of the concluding chapter. The rest of the book consists of purely critical and historical studies by a sober and cool-headed scholar. Leibnitz's system as it is represented in our histories of philosophy and as it is currently conceived lacks a unitary and leading idea, so that many of its most fundamental propositions appear to be at variance. Mr. Dillmann maintains that Leibnitz's philosophy as it really is does not lack this unity; he has made an extensive and most diligent study of Leibnitz's works and proves with great plausibility through the assistance of many pertinent quotations the justice of his cause.

Leibnitz's monadology is according to Dillmann essentially a conciliatory system. It attempts to reconcile the world-conceptions of his time. The mechanical explanation of nature as it was proposed in modern times and according to which all processes should be conceived as motions of bodies is harmonised with the formalistic views of classical antiquity and of the schoolmen which seeks for the causes of all phenomena in substantial forms. In aiming at such a combination, he had to show that all single phenomena of bodies and also their qualities had some ground and that the principle of the body itself consisted in a substantial form. This led him to conceive of bodies and of all things not as phenomena of an external world but as representations in the mind, and thus an entirely new standpoint was gained (p. 511). Representations are the inner states of Monads (p. 318). Monads are substances because representations are units; for representations are the many expressed in a unity (p. 319). Every monad is a concentration of the universe (p. 313). It is as if God had multiplied the universe as often as there are souls (p. 314). Every substance is a little world in itself, expressing the great world of the universe. The substance imitates in its little world what God does in the universe (p. 313).

Leibnitz's God-idea has suffered most from a misconception of the fundamental idea of his system. Dillmann declares that the traditional view, especially Fischer's, is in conflict with the philosopher's own words. While Fischer says that Leibnitz's God has created the substances and arbitrarily endowed them with their natures, Dillmann maintains on the ground of ample quotations that Leibnitz considers the

forms of all possible existences as given: not even God can alter them. God however can and did compare all possible worlds, and then created that which his wisdom found to be the best world. "God," says Leibnitz, "does not select a general Adam, but such a one," i. e. an individual Adam, "whose perfect representation is found among all the possible beings which exist in the ideas of God. The nature of every creature is determined by eternal truths which are in the understanding of God independent of his will." "God's decree consists alone in the decision arrived at after having compared all possible worlds and having admitted into existence that one which is the best of all." κρς.

LEITFADEN DER PHYSIOLOGISCHEN PSYCHOLOGIE IN 14 VORLESUNGEN. By Dr. *Th. Ziehen*, Docent in Jena. Mit 21 Abbildungen im Text. Jena: Gustav Fischer. 1891.

The merits of these 14 lectures on physiological psychology are thoroughness, lucidity, and conciseness; the whole book is a pamphlet of 174 pp. only. The method of presentation is in all its detail work positive, stating the facts as they have been found to be by experience and as they are corroborated by experiment. Upon the whole it is a good résumé of the present state of knowledge. A translation would be very desirable and it is to be hoped that some of our psychologists will undertake the work.

The contents are briefly as follows: I. Contents and scope of psychology. II. Sensation, association, action. III. Stimulus, sensation. IV. Taste, smell, touch. V. Hearing. VI. Vision. VII. Affective aspect of sensation (pleasure and pain). VIII. Sensation, memory, concept. IX. Association of ideas. X. Judgment and syllogism. XI. Attention, voluntary thought, the ego (Ziehen says: "psychologically considered the simple ego is a theoretical fiction," p. 139). XII. Diseased thinking, sleep, hypnosis. XIII. Action, expressive motions, language. XIV. Will, general conclusions.

Although Dr. Ziehen's pamphlet is upon the whole an excellent treatise, we cannot agree with the author in several questions which are of great importance in their consequences.

Dr. Ziehen acknowledges that the specifically nervous processes, a sensible stimulus and a reaction, which latter is a motory effect, cannot be explained from physical laws alone (p. 4). Yet at the same time he denies that the fact that the reflexes are adapted to a purpose *(Zweckmässigkeit)* proves the presence of a psychical parallelism. "Pflüger," he says, "was wrong in attributing for this reason to the spinal cord a spinal-cord-soul." The *Zweckmässigkeit* of reflexes (i. e. their being adapted to a purpose) has originated not otherwise than the *Zweckmässigkeit* of the color of the bird's plumage, i. e. through natural selection and inheritance. This argument might be admissible, if we had not to account for the gradual origin of consciousness also. There was a time when our personal consciousness did not exist, and there was also a time when no conscious being lived upon the earth. Unless we assume

that consciousness suddenly appeared, creating out of its own subjectivity alone the objective world which appears to us as what we call matter in motion, we shall have to adopt some monistic view of the subject. To consider the psychical states as known and the objectivity of existence as utterly unknown is no monism.

Dr. Ziehen is opposed to the idea of psychical parallelism which he conceives to be dualism, but he proposes a spiritual monism in its stead, the difficulties of which he does not explain. It is to be regretted that Dr. Ziehen has not understood the main idea of the parallelism doctrine. He says in a foot-note (p. 6): "In the most extreme way, but with quite insufficient reasons Lewes has maintained the omnipresence of consciousness." This is a misstatement of Lewes's view, which by the bye is held by the reviewer also, although he confesses that the term parallelism is inappropriate and leads to misunderstandings. The theory of parallelism (at least as the reviewer holds it) is not dualistic but monistic. It implies that the subjectivity and objectivity of existence are two different abstractions of one and the same reality. Its parallelism is a parallelism of these two sets of abstraction, while the reality from which they have been derived is one throughout. There exist no subjects that are not objects to other subjects, and every object admits of a subjective aspect. There is a something supposed to be present throughout nature which under certain conditions appears as consciousness. This certain something is called by Clifford elements of feeling, by Lloyd Morgan metakinesis, it has been characterised in the editorials of *The Monist* as the subjectivity of existence, and the presence of this something in the spinal cord was called by Pflüger *Rückenmarksseele*.

It appears to me that if we could explain the well adapted reaction of nervous substance without assuming a psychical element in it, we could explain the whole process of evolution and the historical development of mankind, without the assumption of consciousness. Yet it is obvious that even the explanation of the color of the bird's plumage by the theory of natural selection and heredity presupposes the presence of psychical elements somewhere. Either the bird and his mates show a color sense, or his enemies do, whose persecution he escapes, or the animals upon whom he preys do. Man's entire existence, physical and psychical, including his feelings of pleasure and pain, can be explained by the theory of natural selection and heredity; yet this is no proof that psychical elements do not exist in him.

It has become customary at present to define "psychical" as that only which appears in states of consciousness, and to exclude subconscious and unconscious states. Dr. Ziehen says: "Everything given in consciousness and that alone is conscious" (p. 3). Yet he introduces after all the expression "psychically latent," "latent memory pictures," and similar expressions. Dr. Ziehen says, "We cannot even have a conception of that which an unconscious idea can be"; yet what is a latent memory-picture but an unconscious idea?

There are two kinds of unconscious ideas: (1) Latent ideas. Every man's brain is full of latent ideas, i. e. of memory-pictures which are at present unconscious but can become conscious at once if their activity is roused by an appropriate stimulus.

(2) Ideas unrelated to the centre of consciousness. Those active ideas which, although at present in a state of activity, are unrelated to the centre of consciousness that constitutes the ego of the man, remain unconscious. Unconscious cerebration (which takes place in dreams, in diseased brains and also in certain phases of healthy brains being, as it were, a by-play of their conscious activity) need not be destitute of feeling. Any pain may be lessened when our attention is called away from it. The nervous disorder remains the same, the feeling substance of the nervous structures in which the pain was perceived also remains the same, its activity and throbbing pulsations do not cease. Yet if we succeed in separating its immediate relation to the centre of consciousness it sinks down into subconsciousness. There is no reason for assuming that the feeling, no longer perceived, is wiped out entirely.

While Dr. Ziehen's pamphlet is a presentation of the results of positive science, we were astonished to find in the first chapter the following statement: "Later on we shall have to investigate whether there are for all psychical phenomena such material parallel processes in the central nervous system, and our answer will be decidedly in the negative." And again we find in the schedule of psychology a distinction between (*a*) psychical processes *not* contingent upon cerebral functions (transcendental psychology), and (*b*) psychical processes contingent upon cerebral functions (physiological psychology). These statements are the more perplexing as the author joins the opposition made by Münsterberg against Professor Wundt's idea of apperception, which is rejected as metaphysical, mystical, and even animistic. While we cannot in all points agree with Professor Wundt's theory of apperception which received a critical examination by Professor Delabarre (see *The Monist* II, No. 2, p. 297), we can most positively say that Dr. Ziehen in so far as he classes Wundt's view among the dualistic theories, misunderstands Wundt's position. Wundt's physico-psychical parallelism cannot be identified with the metaphysical fiction of a subject, be this subject called ego or soul.* Wundt says in a late publication of his: "Psychology of to-day, since Kant has shown the way, seeks the nature of the soul again, as did Aristotle of yore, in the facts of the spiritual life themselves and not in an unknowable 'thing in itself'. . . ." *Deutsche Rundschau* of 1891, p. 203. Wundt's "apperception" is no metaphysical being, but simply means the focus of perception, the centre of consciousness. Wundt is certainly not infallible and we are inclined to believe that in some details he is mistaken. He is nevertheless one of the very greatest leaders among the investigators of the soul and his monism as well as his antimetaphysical tendencies cannot be doubted.

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* Ziehen declares (p. 129) that the problem of physiological psychology consists in reducing the different forms of thinking up to the most complex argumentation to simple associations of ideas and its laws. Wundt says, that there are many psychical idea-combinations which cannot be explained simply by association of ideas. So, Ziehen continues (p. 130), Wundt assumes above idea associations a special faculty of the soul called apperception, which serves now as attention, now as will, but is in either case a metaphysical faculty of the soul, the active subject which independent of mechanical causality is said to be the cause of these phenomena.—I do not think that anyone who knows Wundt will accept this as a fair representation of his views.

Ziehen reaches his monism by considering objective existence, as it appears to us and which we call matter, as "something utterly unknowable." He says, "The "psychical series alone is given. . . . Thus the psycho-physical dualism or parallel-"ism is apparent only. Considering that the psychical series alone is given, we shall "understand, that we had repeatedly to face in our investigations such factors in "which the material foundations are missing. I here remind you of the projection "of our sensations into space and time, for which we could not find a psycho-phys-"ical explanation."

We hope that Dr. Ziehen will soon find occasion to explain his philosophical views. Such an explanation may throw light on his psychological theory. We do not as yet see how he can solve without inconsistency the many difficulties in which his philosophical standpoint will involve his psychology. κρς.

PSYCHOLOGIE DER SUGGESTION. By *Dr. Hans Schmidkunz*. Stuttgart, 1892,—pp. 425. Large 8 vo.

The rapidly increasing devotion to the study of Hypnotism has yielded many valuable results, both practical and theoretical. Its application to the cure of disease—psycho-therapeutics—has been most extensively introduced and bids fair to become the representative in scientific form of the germ of truth buried amongst the vast rubbish-heap of suspicious practices and pseudo-scientific "isms." New light has been thrown on the questions of responsibility and the legal aspects of slightly abnormal states. Education and ethics, it has been more than hinted, are to find practical aids in hypnotism; while in the light of modern scientifically recognised phenomena, many of the events influential in the development of religions find a rationalistic interpretation. But the science which more than all others, the study of hypnotism is destined to enrich, is that of Experimental Psychology; and it is this phase of the subject to which Dr. Schmidkunz has devoted his volume.

The central core of the whole subject is the fact of suggestion,—a fact so comprehensive that it is almost easier to say what it is not than what it is. If we make allowance for that portion of our conduct that is based upon individual acquisitions and proceeds by logically reasoned steps, all the rest is more or less the result of suggestions, of one kind or another. To appreciate the psychology of this process it is necessary to appreciate its varieties and universality. We receive suggestions from things and deeds; the sight of food makes us hungry; the sight of our neighbor consulting his watch induces a strong desire to know what time it is. Words are powerful implements of suggestion; we accept those doctrines that we hear about us and are influenced much more frequently than we are convinced. The personal factor in suggestion is important; to some we feel attracted and accept as leaders, while others excite repulsion and antagonism. The indirectness of the process of suggestion is to be noted; in most cases we are quite unconscious of the influences exerted upon us and by which our conduct is guided, and this ignorance of the motives of our acts, Spinoza tells us, is the cause of the illusion of free will. Sympa-

thy, imitation, the contagion of masses, the action of the mind upon the body, the formation of public sentiment,—all exemplify the process of suggestion and add their testimony to its power and domain.

We must recognise, too, that our suggestibility is a variable phenomenon; at some moments we are self-assertive and determined, at others passive and readily following another's lead. Sometimes we take the reins in our own hands, and again allow the vehicle to find its way as it will. Every night we pass into a condition in which conscious control is abandoned and logic gives way to suggestion. A trifling illness, a dose of medicine may increase our suggestibility, and place us in a position allied to that of the hypnotic subject. All this prepares the way for recognising as the distinctive characteristic of the hypnotic condition, an exaggerated suggestibility. Not alone is there a ready yielding to every suggestion of the operator, but functions normally not under volitional control may be appealed to and utilised by the slighter and subtler processes of hypnotic suggestion. The variable threshold between the voluntary and the involuntary is shifted to a surprising extent. That complex interrelation of centres with which the sense of personality is intimately connected yields to the same influences and makes possible an experimental study of this vexed problem.

This, then, is the Psychology of Suggestion, the contribution that Hypnotism makes to Psychology. It lays stress upon the great rôle this process plays in every day mental life and thus asks us to see in hypnotism a condition closely allied to the normal, and simply illustrating in an unusually striking way, one great factor in our mental composition. It rearranges the hierarchy of mental faculties and finds a more important place for suggestion than has been before accorded to it. From a somewhat obscure and sporadic phenomenon occasionally entering into mental states, it is raised to the dignity of one of the most frequent, most important, most fertile generalisations of scientific psychology. Whether one fully agrees with this position or not, it is certainly a service to have it so comprehensively, even if at times prolixly stated, and to be assured that the study of Psychology is deriving as much benefit from the researches in hypnotism as are the more practical sciences. J. J.

HYPNOTISME, SUGGESTION, PSYCHOTHEROPIE. Études Nouvelles par le *Dr. Bernheim*, Professeur à la Faculté de médécine de Nancy. Paris: 1891. Octave Doin., pp. 518.

The literature of the new science of Hypnotism continues to increase with unabated pace; most of the contributions consist of studies of a few cases or a brief exposition of a single point, in most cases of points relative to the application of hypnotism to disease. The present volume, however, is of special importance not alone because of the authority that Dr. Bernheim's name brings with it,—but because of the comprehensiveness and the skill and interest of the exposition. It is supplementary to Dr. Bernheim's former volume, "Suggestive Psychotherapeutics," (1886–87, English translation, 1889) and reflects the progress that has resulted from

continued and systematic observation. The therapeutic interest in it naturally finds most complete representation and about half the volume is devoted to the description of cases cured or benefited by suggestive treatment. Although nervous complaints predominate in these well arranged and well described cases, yet the method is shown applicable to all the ills that flesh is heir to. While this portion of the volume will be of greatest interest to the medical world, the psychologist will find most food for reflection in the first and more theoretical half of the book. He will find there an interesting historical sketch illustrating how processes similar to those now studied as hypnotism have been in use from ancient times; how all the various healers, and the various processes and agencies used by them, involve different modes of application of the one principle of suggestion. "It is the human imagination that works miracles."

Suggestion is defined as the act by which an idea is introduced in the brain and accepted by it, and thus many of the means by which one person influences another under every day, normal circumstances would be included in the term. Hypnotism is simply one of the most important and efficient methods of producing a state of increased suggestibility. In every day life we have abundant evidence of the tendency of ideas to be realised in actions; with every change in thought and emotion there is associated some motor expression, too subtle perhaps for analysis and description, but still present and significant. Under excitement and nervous strain these motor accompaniments of thought are increased and serve as the basis of the muscle reader's skill. Again the possibility of disbelief and of recognising the illusory character of a sensation involve the control of higher directing powers; the accumulated experience of the past passes sentence upon the new candidate. If we imagine a condition in which this form of control is abolished, we should have a subject accepting as real almost any idea or sensation that is suggested to him, and expressing freely and unreservedly his acceptance of the same. And this it is that hypnotism does. It builds upon the natural credulity which it is the difficult task of reason to shape and control, and brings into prominence the automatic, subconscious phases of mental action. It does not endow subjects with new faculties or deprive them of their individuality, but shows in a strangely perverted perspective the various faculties and processes that go to build the endlessly complex elements of a personality. This "suggestion" view of hypnotism is the contribution of the Nancy School, and is fast becoming the recognised view of science; one will nowhere find a clearer and more convincing exposition of it than in Dr. Bernheim's pages.

It is clearly impossible to summarise the various details that make up the body of the volume; but all the important topics are discussed and result in conclusions unusually free as well from vagueness as from narrowness. The processes inducing the state, the proportion of susceptible individuals, the various kinds and stages of hypnotism, its relation to sleep and other normal states, the rôle of memory in hypnotism, the interesting post-hypnotic, negative and retroactive hallucinations, its relation to hysteria, its possible use in crime,—these are some of the chief topics

treated. The volume is a valuable contribution to the literature of the subject, reflects its most recent acquisitions, and would well merit a presentation in an English translation. J. J.

HANDBOOK OF PSYCHOLOGY. In two volumes; Senses and Intellect, and, Feeling and Will. By *James Mark Baldwin*, M. A., Ph. D., Professor in the University of Toronto. New York: Henry Holt & Co., 1891.

These are two books diligently worked out, the former of 343, the latter of 397 pp. They cover almost the entire field of psychology excluding however the treatment of such abnormal states as are Mental Pathology and Hypnotism. The author is a disciple of Dr. McCosh, and is strongly influenced by Wundt, of Leipzig, and Rabier, of Paris; yet he has developed an independent view of the nature of the soul which perhaps comes nearest to that of Prof. William James, of Harvard. The two books are actually two parts of one work, the one complementing the other. The former however is not, as the name suggests, an exposition of the nature of the senses in their relation to or as the basis of the intellect; it is an inquisition into consciousness, sensation, perception, association, imagination, rational thought, and kindred subjects. The latter, after an introduction of 50 pp., characterising the mechanism of the nervous system, treats of feeling as sensation, as pleasure and pain, as interest and belief, as emotion, and passes over to the subject of a motor consciousness, or will, ending in a chapter on volition.

Professor Baldwin states that "after we enter consciousness we find a principle "of apperception to which there is no analogy in physiological integration," adding in a foot-note: "Since the section of the 'Unity of Composition' theory was written, "Professor James has published an acute criticism in substantial agreement with it, "and the passage quoted makes reference to the sixth chapter of Professor James's "Psychology in which he rejects the so-called 'mind-stuff,' theory, declaring a self-"compounding of mental facts to be inadmissible and proposes at last what he calls "soul-theory.'" Professor James in this chapter commits the mistake indicated in the editorial of the last number of *The Monist* (p. 248) that he considers things as things in themselves and then looks for a relation producing principle. He says:

"In the parallelogram of forces, the 'forces' themselves do not combine into "the diagonal resultant; a *body* is needed on which they may impinge, to exhibit "their resultant effect."

"Take a sentence of a dozen words, and take twelve men and tell to each one "word. Then stand the men in a row or jam them in a bunch, and let each think "of his word as intently as he will; nowhere will there be a consciousness of the "whole sentence."

Thus Professor W. James is in need of what he calls a "medium." He says:

"*All the 'combinations' which we actually know are* EFFECTS, *wrought by the "units said to be 'combined,'* UPON SOME ENTITY OTHER THAN THEMSELVES. With-"out this feature of a medium or vehicle, the notion of combination has no sense."

We observe that feelings which originate through the impressions of the outer world upon some sentient organism, enter into relations to each other, as naturally as things are in relations, or under certain circumstances will enter more closely into relations with each other. The "soul" accordingly is postulated by Professor James as a medium to combine the effects of the manifold brain processes in order to "escape the absurdity of supposing feelings which exist separately and then 'fuse "together' by themselves. The separateness is in the brain-world, on this theory, "and the unity in the soul world, and the only trouble that remains to haunt us is "the metaphysical one of understanding how one sort of world or existent thing can "affect or influence another at all." This is dualism and we suppose that Professor James is conscious of it. κρς.

UNTERSUCHUNGEN ZUR PHYSIOLOGISCHEN MORPHOLOGIE DER THIERE. II. ORGANBILDUNG UND WACHSTHUM. By Dr. *Jacques Loeb*. Mit 2 Tafeln in Lithographie und 9 Figuren im Text. Würzburg: Georg Hertz. 1892.

Dr. Jacques Loeb formerly of Zürich and lately returned from the Zoological station at Naples has been appointed Professor at Bryn Mawr College, Pennsylvania. Former publications of his were reviewed in *The Monist* I, No. 2, p. 300. The present pamphlet is a continuance of his investigations in physiological morphology. Some of his experiments are made with *Antennularia antennina* (a hydroid polyp) and the author describes how without mutilation, simply by giving the creature a fixed position he succeeded in making it develop certain organs in certain places, thus proving gravitation to be an important factor in determining the growth of certain limbs. Dr. Loeb adds a few articles on the dependence of the longitudinal growth and also of the regeneration of Tubularia upon the concentration of the salt-water. His experiments with *Ciona intestinalis* (a solitary ascidia) prove that (1) a section in the side of the oral orifice as well as of the anus will cause the formation of ocelli on the margin of the section, (2) after an extirpation of the central nervous system the reflexes continue although with a higher threshold of the stimulus, and (3) the ciona is capable of developing the central nervous system again. κρς.

DAS DASEIN ALS LUST, LEID, UND LIEBE. Die altindische Weltanschauung in neuzeitlicher Darstellung. Ein Beitrag zum Darwinismus. Mit 2 Tondrucken, 24 Zeichnungen und 10 Tabellen. By Dr. *Hübbe-Schleiden*. Braunschweig: C. A. Schwetschke & Sohn, 1891.

The author of this book is Dr. Hübbe-Schleiden, editor of *The Sphinx*, a monthly magazine published in Germany which professes to "lay down historically and experimentally the supersensible World-Conception upon a monistic basis." Love of Mysticism is the main feature of *The Sphinx* as well as Dr. Hübbe-Schleiden's book. *The Sphinx* contains reports of cases of telepathy and is quite serious in investigating the spook of a haunted house. The present book contains the author's confession of faith. The symbols by which he depicts his world-con-

ception reveal a cabalistic taste, and we believe that the illustrations will be rather repugnant to the man of science, as they give the impression of fantasticism. The main idea of the book is to modernise the old Hindoo view that "Kama" desire or *Lust* is the ground of all being, as is said in the Brihad-Aranyaka Upanishad (IV, 4, 5): "Man consists entirely of desire (*Kama*); as is his desire, so is his will (*Kratu*); as is his will, so is his life (*Karma*, i. e., activity); as is his life, so is his fate."

Dr. Hübbe-Schleiden rejects the Hindoo view of a migration of soul in so far as it suggests the idea of something personal; he prefers to speak of a transformation of soul. This, he says, has been and it may be called "metaphysical Darwinism"; and we must confess that the nucleus of the idea touches the most vital point of all the problems of life. We cannot explain ethics and the ethical instinct of man without taking into consideration that man lives and aspires for something that will outlast his individual existence. The author says: "Why do you strive for something higher, for perfection, for completion or whatever your aim may be called? Why all that, if you imagine that your individuality has only this one life upon earth and you can realise only a very small part of what you strive for? Why all your trouble, if the main thing is in vain?" We agree with the author that our moral instinct, our ideals and aspirations which are most powerful realities in life point to a life beyond the grave, they indicate that death is no finality and evolution teaches us that our souls actually continue to exist. Our souls in their individual features are parts only of the whole evolution of our race and these very individual features of our souls can be and will be preserved in the future generations.

Dr. Hübbe-Schleiden's book is characteristic of a strange tendency of our time to combine the results of modern science with the old notions of occultism. There is in it a psychological and ethical truth overgrown with a fanciful imagination. κρς.

MAX MÜLLER AND THE SCIENCE OF LANGUAGE. A Criticism. By *William Dwight Whitney*, Professor in Yale University. New York: D. Appleton and Company. 1892.

The Professors W. D. Whitney and F. Max Müller are not on good terms. They do not only disagree on several fundamental and many minor points, concerning the science of language, but their warfare, as is well known, is at the same time of a personal nature. The present little volume is a criticism of the new edition of Max Müller's "Science of Language." The great Yale philologist recognising that this work of his antagonistic Oxford colleague "is still the principal and most authoritative text-book of that study," and noting that "its author has gained no new light from the criticisms that have been made upon his work," feels called upon to warn the reader that "it may not be trusted where it is untrustworthy and so do harm to the science which it was intended to help." The title of the book, according to Professor Whitney, ought to be "Facts and Fancies in Regard to Language and Other Related Subjects."

Schleicher says: "Languages are natural organisms which, without being determinable by the will of man, grew and developed themselves in accordance with fixed laws. . . . Its method is on the whole and in general the same with that of the other natural sciences." Professor Whitney censures Max Müller for calling the first part of Schleicher's proposition "sheer mythology," and then adopting the inference made therefrom considering the science of language as a physical science. Now it is true that the expression "organism" must not be taken literally; languages are not animals or plants, but they have some quality that is comparable to animals and plants. Their life and the development of their life is in many respects analogous to the life of organisms. Professor Whitney regards language as "a body of conventional signs for ideas" and protests against Prof. Max Müller's usage of the word "conventional" as if it implied "a convention of people gathered to discuss and decide on the words and forms by which conceptions should be represented." In contradistinction to Max Müller who holds that philology is a physical science, Professor Whitney regards it as an historical science. "Physical science," says Max Müller, "deals with the works of God, historical science with the works of man." Thus optics is a physical science, painting an historical science. Whitney declares that individuals initiate changes and the community either accepts and uses them, making them language by its use or rejects and annuls them by refusing to use them. In one word Max Müller says language is φύσει, a product of nature, and Whitney says it is θέσει, an institution of man. We believe that Professor Whitney stands almost alone in his conception of language.

Another no less important point is Professor Whitney's objection to Prof. Max Müller's proposition of the Identity of Language and Thought. Here Professor Whitney will find many supporters for his case; but we must add that Prof. Max Müller does not exactly mean what he says. He means by identity inseparableness. It is not so much Max Müller's position that should be attacked as his misleading terminology. Concerning the origin of language Professor Whitney finds an instructive parallel in the beginnings of writing which were mutually intelligible signs, or in the written language of mathematics. "So we do no longer see," he says, "the two and three strokes in our figures 2 and 3, although they are really there disguised from view." This is a good simile, and undoubtedly *cum grano salis* true. But it is rather strange that Professor Whitney should find Noiré's theory of the origin of language "utterly fantastic."

These are fundamental differences. There are some more, less important points such as the etymology of king being the Sanskrit *janaka*. Max Müller proposes a very improbable reason for the change of meaning in the Lat. *fagus*, O. Germ. *boka* (beech), Greek *phegos*, Lat. *quercus*, and Germ. *fôraha* (fir). Professor Whitney might have mentioned that a more probable reason for this change has been proposed of late by those who seek the home of the Aryans in Europe. A migrating people would naturally have called in their old home the beech, in their new the oak "a tree with edible fruit." The same method is applicable to explain the change

of meaning in *forah-a-quercus* which means in northern countries a fir and in Italy an oak.

Professor Whitney sums up his case as follows (p. 77): he finds "language "study . . . . declared on transparently false grounds, to be a physical science, and "language an existence which man had no part in making and changing; dialectic "growth misunderstood, families of language regarded as exceptional, and a 'Tu- "ranian' barathrum arranged to catch all little-known varieties of speech; antece- "dent unity of dialect taught in one case and denied in another; a word held to be "killed by the least mispronunciation; *conventional* explained to mean 'voted by a "convention'; thought and its expression viewed as inseparable, and even identical; "the origin of language seemingly ascribed to an instinctive ding-dong of the tongue "—and so on; to complete the list would be almost to give a table of principal con- "tents of the two volumes—and a style of discussion used throughout which indi- "cated that the author was playing with his subject rather than investigating it "seriously. . . . . The book is not science, but literature. Taken as literature, it is "of high rank, as the admiration of the public sufficiently testifies; its author has "a special gift for interesting statement and illustration, for lending a charm to the "subjects he discusses; and he carries captive the judgments of his hearers and of "many of his readers. He is a born *littérateur*."

Professor Whitney concludes: "Now as heretofore, I rest my defense on not "the just intent alone, but the real substantial justice of my criticisms; if they are "unfounded, I deserve reprehension for making them; if they are right, then there "is nothing, either in the degree of importance of the subjects to which they relate, "or in the personality against whom they are directed, to call for their condemna- "tion." κρς.

SEIFENBLASEN. Moderne Märchen. By *Kurd Lasswitz*. Hamburg and Leipsic: Leopold Voss. 1890.

"Märchen," in the province of science, we are inclined to believe are a prize problem for our modern poets. Who will solve it? Kurd Lasswitz has made an attempt and considering the great difficulty of the problem, we are not inclined to criticise him. The author, who has worked in scientific fields and has proved his ability as a close student, exhibits in these "soap-bubbles" a fertile imagination and poetic invention. Most of his sketches fall short of the ideal märchen of science as we conceive it, but their reading is suggestive and deserves the attention of those whose disposition favors the creation of a middle ground between science and poetry.

κρς

PERIODICALS.

REVUE PHILOSOPHIQUE.

CONTENTS: December, 1891. No. 192.

CONTENTS: January, 1892. No. 193.

CONTENTS: February, 1892. No. 194.

One of the problems of the unique and great work of Carl Stumpf's "Tonpsychologie" is the subject of L. Dauriac's essay. The question is when several sounds enter the ear at the same time, the plurality of which is not directly known, do you have your information through an inner sense? Does every unit of the irritation correspond to a distinct unit of sensation? Is there in consciousness a simultaneousness of sensations similarly as outside of consciousness there is a simultaneousness of vibrations? M. Dauriac maintains that Stumpf's question can be answered only on the ground of metaphysical postulates, and if preconceived solutions are to be excluded, it must be considered as insoluble.

Alfred Fouillée, in his second article on the origin of our intellectual and cerebral structure, which treats on evolutionism, comes to the conclusion that the hypothesis which in the most simple way explains the agreement of thoughts and objects is the doctrine of a radical unity generally called Monism.

J. Passy notes certain characteristic and psychologically interesting features of the drawings of children.

M. A. Binet presents two physiognomical pictures of the same face, one representing disgust or scorn, the other a good-humored and happy smile. The upper parts of both faces are exactly alike and yet the eyes of the former look disdainful while the very same eyes of the latter are full of jest and merriment. This is the fact. M. Binet psychologically interprets the fact as a phenomenon of automatic inhibition. The fact is interesting, but its interpretation seems doubtful.

Charles Dunan discusses the metaphysical aspect of the problem of life.

B. Perez's article is a contribution to pathological psychology with special reference to M. Magalhães's work on the subject. Pessimism, M. Perez says, is a disease only if exaggerated, yet he believes that medico-psychological studies which consider the relation between the physical system and morality are very helpful even if carried too far.

M. J.-M. Guardia's article will have a special interest for Americans. Three men arose in Spain of late, Valentin Almirall, M. L. Mallada, and J.-M. Escudor, who spoke bold and hard words of truth to their country. Cuba is the hen that lays golden eggs for Spain, but the Cubans are treated with great contempt in Spain; and yet the Spaniards are by no means their intellectual superiors, for while Spain is poor in philosophy, Cuba is the only country of Latin America where philosophy has taken root. M. Guardia sketches in the first article the history and philosophy of Don Félix Varélay y Moralès who is the harbinger of the other Spanish-Cuban philosopher, José de la Luz. The second article in the February number treats of the latter (1800–1862) whom Guardia calls the master.

George Mouret with reference to Frontera's book on Zeno's argument against motion makes a few remarks concerning the Eleatic sophism about Achilles and the tortoise.

An injury of a thalamus opticus produces in horses and other animals the effect of their making rotatory movements when intending to walk straight on. Forell proved that a similar effect is produced in ants by a lesion of one of their lobes. M. Binet publishes in the present essay his experiments on certain water-beetles, exhibiting diagrams of their normal and abnormal walk. (Paris: Félix Alcan.) *κρς.*

ZEITSCHRIFT FÜR PSYCHOLOGIE UND PHYSIOLOGIE DER SINNESORGANE. Vols. II and III.

CONTENTS: November, 1891. No. 6.

CONTENTS: December, 1891. No. 1.

BEMERKUNGEN ZU DEM AUFSATZE VON DR. SOMMER "ZUR PSYCHOLOGIE DER SPRACHE." By Prof. *A. Pick.*

LITTERATURBERICHT.

Dr. C. du Bois-Reymond believes that corporeal vision is either produced by one eye running in succession over several places or two eyes viewing two aspects of the object. Mach's theory of the influence of shade upon the production of the third dimension in vision which affords quite a new and a better explanation of the phenomenon is not mentioned. Stumpf closes his controversy with Wundt with a few remarks in answer to Wundt's reply (in *Philos. Studien* VII, pp. 298–327); and Flügel objects to Professor Rehmke's proposition made in a criticism of Flügel's book "Die Seelenfrage," that Herbart's psychology, being atomism, is at bottom materialism.

Dr. Richard Greeff describes Hering's apparatus for investigating the cause of binocular vision. Wheatstone believes that the perspective of the two retina pictures produces the effect of corporeality while Brücke declares that it is mainly due to muscle-sensations. Hering sides with Wheatstone, and the experiments as described by Greeff prove that the third dimension is unfailingly perceived whenever the ocular axes diverge, while in other cases the same result is not attained.

Dr. Sommer had presented in a former article the facts of an interesting case of aphasia, (see *The Monist*, Vol. I, No. 4, p. 629) where the patient, his name is Voit, could remember and pronounce words only when writing them. Prof. A. Pick objects to Dr. Sommer's regarding the case as contrary to our present experience and following two French authorities Ballet and Bernard, adduces cases of Aphasia by right-sided hemiphlegia where patients could read only when they were able to write or represent to themselves the writing motions of their hand. Thus one patient of Charcot could only read print, and not written words "because," as he said, "it was easier for him to reproduce in his mind the written letter." This reminds one of the case a deaf-mute who said: "I feel whenever I think of the motions of my fingers although they are pertectly at rest. I see internally an image of my moving fingers." Professor Pick concludes that the case Voit is a good argument against Max Müller's proposition of the identity of language and thought. Max Müller however includes in his conception of word any symbol of an idea. The finger motion of a deaf-mute is a word, and the writing motion of Voit is also a word, according to Professor Max Müller's theory.

Prof. H. v. Helmholtz publishes the tables of his experiments in applying the psycho-physical law upon color differences of trichromatic eyes, and presents the three fundamental colors diagrammatically in an equilateral triangle in the centre of which lies white. A curve winding round this centre shows the relation of the rainbow spectrum in the system of three fundamental colors. The results do not as yet agree with the investigations of A. König and C. Diterici who make similar inquiries with bichromatic eyes. (Leipsic: O. R. Reisland.) κρς.

VIERTELJAHRSSCHRIFT FÜR WISSENSCHAFTLICHE PHILOSOPHIE. Vol. XVI. No. 1.

CONTENTS:

UEBER DIE FORTSCHREITENDE ENTWICKLUNG DES MENSCHENGESCHLECHTS. II. By *F. Rosenberger*.

ERNST PLATNER'S WISSENSCHAFTLICHE STELLUNG ZU KANT IN ERKENNTNISSTHEORIE UND MORALPHILOSOPHIE. I. By *B. Seligkowitz*.

UEBER SPRACHREFLEX, NATIVISMUS UND ABSICHTLICHE SPRACHBILDUNG. X. By *A. Marty*.

Prof. A. Riehl begins in this number a series of articles on logic. The first two chapters are (1) concepts and definitions. Riehl distinguishes between a definition and a predicating sentence *(Aussage)*, for instance, "Space has three dimensions," is a mere definition, but "Space is the form of our intuition," is an *Aussage*. (2) Conceptual sentences and judgments. The former are merely representative and cannot as the latter be said to combine or separate ideas.

Ad. Nitsche criticises Johannes v. Kries's idea that the calculus of probabilities is admissible only if the chances are equivalent. Equivalent chances *(gleiche Spielräume)*, he objects, are apparently impossible, yet he admits that upon the degree of a knowledge of the conditions will depend the reliability of the probability.

The object of B. Seligkowitz's article is to rescue from oblivion a philosopher who especially as a critic of Kant deserves to be better known than he is, Ernst Platner (1744–1818.)

The tenth and concluding article of A. Marty on the origin of language reviews Paul Regnaud's work *Origine et philosophie du langage*. (Leipsic: O. R. Reisland.)

κρς.

THE AMERICAN JOURNAL OF PSYCHOLOGY. December, 1891. Vol. IV. No. 2.

CONTENTS:

The post mortem examination of Laura Bridgman shows "a brain in which the olfactory bulbs and nerves, the optic nerves, the auditory nerves, and possibly the glossopharyngeal, had all been more or less destroyed at their peripheral ends. This destruction caused a degeneration—most marked in the optic nerves—which

extended towards the centres and involved them indirectly. . . . This case represents a maximum loss in these defective senses with a minimum amount of central disturbance, thus offering the very best sort of opportunity for education by way of the surviving senses. . . . Mental association was for Laura Bridgman limited to various phases of the dermal sensations and the minor and imperfect senses of taste and smell. . . . The motor centre there had lost some, but not all its associative connections." (Clark University, Worcester, Mass.) κρσ.

INTERNATIONAL JOURNAL OF ETHICS. January, 1892. Vol. II. No. 2.

CONTENTS:

Brother Azarias paraphrases and praises the ethics of the Papal Encyclical. J. S. Mackenzie starts from Kant's famous remarks that two things fill our minds with reverence, the starry heavens above and the moral law within. The worship of these two separately and the worship of them in combination are set forth as the three great religions of the world. Fanny Herts pleads for the abolishment of war. She quotes largely from Bertha Suttner's novel, "Die Waffen nieder," and from Friederich's letters. Authority, according to Professor Nettleship, is "the power which in the sphere of conduct, in the long run determines our practice and in the sphere of intellect in the long run determines our assent." There are roughly speaking four kinds of authority: (1) the authority of law, (2) the authority of religious bodies, (3) the authority of society or public opinion and (4) the authority of great men. Where is the seat of authority? "For each individual," Professor Nettleship maintains, "the absolute guide can, in the long run be no other than his own conscience." The origin of conscience and the criterion whether the voice of conscience be true or not are not explained. (Philadelphia: *International Journal of Ethics*, 118 S. Twelfth Street.) κρς.

MIND. New Series. No. 1. January, 1892.

CONTENTS:

W. E. Johnson says: "As a material machine is an instrument for economising "the exertion of force, so a symbolic calculus is an instrument for economising

"the exertion of intelligence. And, employing the same analogy, the more perfect "the calculus, the smaller would be the amount of intelligence applied as compared "with the results produced." He continues:

"But as the exertion of *some* force is necessary for working the machine, so "the exertion of *some* intelligence is necessary for working the calculus."

Here we feel inclined to stop our author. That which makes of a certain amount of metal, brass, and wood a machine, is the form in which they are composed, and this form is instrumental in using a certain amount of energy for doing a certain kind of work. Intelligence is not analogous to force but to the form of force. Not intelligence is necessary to run the instrument of intelligence, but some power, some force, some energy, and this power needed for running the instrument of intelligence, as it exists in man, is generally called will. So we are at variance with Mr. W. S. Johnson from the outset. Mr. Johnson from his standpoint considers it "important to examine the kind and degree of intelligence that are de- "manded in the employment of any symbolic calculus. It will appear that the "*logical* calculus stands in a unique relation to intelligence; for it aims at exhibit- "ing, in a non-intelligent form, those same intelligent principles that are actually "required for working it."

We abstain here from discussing the details of this highly suggestive article which contains much that is of interest to logicians. The author claims especially with regard to his interpretation of the universal and particular that his results exactly correspond with the interpretation given by Dr. Venn and Mr. Peirce, and worked out by Dr. Keynes.

The Germans distinguish between *Urtheil* and *Beurtheilung*, the first being judgment in general, the latter a judgment that declares something to possess value from the view of truth, beauty or goodness. In this sense Mr. S. Alexander deals with the idea of value. He states two main principles (1) That value is "the efficiency of a conscious agent to promote the efficiency of society" and this, the author says, was maintained indirectly in opposition to the view that value was determined by pleasure. (2) That value is itself no something separable from other mental facts by a wide gulf, but was itself a fact of a purely natural order. "Sollen" is one kind of "Sein."

Mr. J. Ellis McTaggart in discussing the changes of method in Hegel's Dialectic arrives at a conclusion which according to the author must be admitted to be quite un-Hegelian. Hegel apparently regarded the procession of the categories with its advance through oppositions and reconciliations as presenting absolute truth. From this the author dissents, "for," he says: "the true process of thought is one "in which each category springs out of the one before it, and not by contradicting "it, but as the expression of its deepest nature, while it, in its turn, is seen to have "its deepest reality in again passing on to the one after it. There is no contradic- "tion no opposition, and consequently no reconciliation. There is only develop- "ment, the rendering explicit what was implicit, the growth of the seed to the 'plant. In the actual course of the dialectic this is never attained. It is an ideal "which is never quite realised, and from the nature of the case never can be quite "realised. In the dialectic there is always opposition, and therefore always recon- "ciliation. We do not go straight onward, but more or less from side to side. It "seems inevitable, therefore, to conclude that the dialectic does not completely and "perfectly express the nature of thought."

Prof. C. Lloyd Morgan starting from the proposition that "the business of consciousness is the control of action" shows that "we identify ourselves rather with

"the action of our control centres than with our lower animal instincts. Through "experience we learn, and habits being formed by individual repetition become in- "nate." Professor Morgan reviews use-inheritance natural selection, sexual selection, the law of beauty, and conduct and verification with regard to psychogenesis. "Our nature," he says, "is intellectual, æsthetic, moral, and sensitive":

"The false is rejected as incongruous to our nature as intellectual; the ugly is "avoided as incongruous to our nature as æsthetic; the wrong is shunned as incon- "gruous to our nature as moral; so is the painful, so far as possible, avoided as "incongruous to our nature as sensitive. . . . The guidance of pleasure and pain is "of great importance—so great that some are found to argue that in moral matters "we are influenced solely by considerations of happiness. . . . Only by extending "the meaning of the words pleasure and pain so as to be coextensive with what I "have here termed congruous and incongruous can it be said that our actions and "our thoughts are determined by pleasure and pain." (London: Williams & Norgate.) *κρσ.*

THE PHILOSOPHICAL REVIEW. Vol. I, No. 1. January, 1892.

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CONTENTS of No. 2:

This is a new magazine which will be an additional proof that the philosophical interest in America is by no means so poor as the inhabitants of the old world generally suppose it to be. The character of the journal, it is to be expected, will be in harmony with the publications of its scholarly editor, Prof. J. G. Schurman, whose position is clearly set forth in a little volume of his "Belief in God," in which he conceives God in three ways (1) as the cause or ground of the world (2) as the realising purpose of the world, and (3) as the father of spirits.

Professor Watson reviews in an elaborate article Edward Caird's work "The Critical Philosophy of Emanuel Kant." "The philosophy of Kant," says Watson, "was accepted at first by submissive disciples, but it had afterwards to submit to a severe process of criticism which culminated in the Absolute Idealism of Hegel. The synthesis of Kant, as based upon an untenable opposition of the phenomenal and the real, was weighed and found wanting. . . . We must be grateful to any one who helps us, not merely to see Kant, but to see beyond him. This is the task which Professor Caird, in his exhaustive work on the Critical Philosophy, has set

himself to perform," and adds Watson, "he has done it in a way that leaves nothing to be desired."

Professor Ladd criticises Professor James's Psychology as so-called natural science.

"What we wish to have in the name of cerebral psychology, is a description, in terms of a comprehensible theory of molecular physics; and, also, a statement of the formulæ which define the relations between the molecular changes and the 'corresponding' orders of mental phenomena. But this is precisely what Professor James avoids doing, even to the extent which so-called 'nerve-physiology' makes possible. And, nothing worthy of the name 'science' *is* possible for any one in this branch of cerebral psycho-physics."

Professor James replies to the criticism in the second number of *The Philosophical Review*. He says:

"Psychology is to-day hardly more than what physics was before Galileo, what chemistry was before Lavoisier. It is a mass of phenomenal description, gossip, and myth, including, however, real material enough to justify one in the hope that its study may become worthy of the name of natural science at no very distant day. I wished, by treating Psychology *like* a natural science, to help her to become one."

Professor Ladd is a transcendentalist and Professor James has great expectations of the work inaugurated by the Society for Psychical Research.

Theoretically they stand much nearer than practically, as well indicated by Professor James's remark:

"In Professor Ladd's own book on 'Physiological Psychology,' that 'real being, proceeding to unfold powers that are *sui generis*, according to laws of its own,' for whose recognition he contends, plays no organic part in the work, and has proved a mere stumbling block to his biological reviewers."

He adds in a footnote:

"I mean that such a being is quite barren of particular consequences. Its character is only known by its reactions on the signals which the nervous system gives, and these must be gathered by observation after the fact. If only it were subject to successive reincarnations, as the theosophists say it is, so that we might guess what sort of a body it would unite with next, or what sort of persons it had helped to constitute previously, those would be great points gained. But even those gains are denied us; and the real being is, for practical purposes, an entire superfluity, which a *practical* psychology can perfectly well do without."

Andrew Seth, the well-known coryphæus of philosophy and psychology at Edinburgh, presses the importance of distinguishing the different standpoints of psychology, epistemology, and metaphysics. Locke, Berkeley, Hume and other English as well as Continental thinkers "speak sometimes from one point of view, sometimes from the other without being aware that the two points of view are different."

"Psychology, assuming the existence of a subject or medium of consciousness, seeks to explain, mainly by the help of association or processes practically similar, how out of the come-and-go of conscious states, there are evolved such subjective facts as perceptions, the belief in an independent real world, and the idea of the Ego or subject himself. . . . Metaphysics has to do with the ultimate nature of the reality which reveals itself alike in the consciousness which knows and the world which is known. . . . The epistemological thing-in-itself to be identified with the metaphysical essence. . . . The problem of knowledge and the Real, is the question which Epistemology has to face." (Boston, New York, Chicago: Ginn & Co.) κρς.

VOPROSUI FILOSOFII I PSICHOLOGII.* Vol, III. No. 11. January, 1892.

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* *Questions of Philosophy and Psychology.*